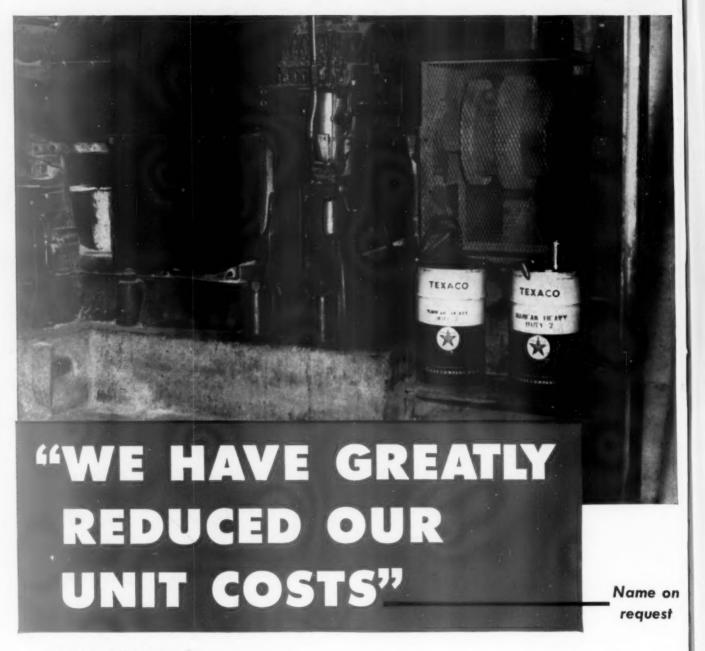
TECHNOLOGY DEPT.

PURCHASING





USING TEXACO exclusively to lubricate all plant machinery and equipment, one of the country's leading asphalt tile manufacturers (name on request) reports greatly reduced unit costs. The reason why is

"Since changing to Texaco . . . results have been—much better performance . . . dependable operation . . . a material saving in maintenance costs."

This is but further proof that Texaco Lubricants in

conjunction with Texaco Lubrication Engineering Service help industry everywhere to do its jobs faster, better and more economically. And such benefits can be *yours*—whatever your line, wherever located.

Find out at first hand how Texaco can serve you. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

û û û

The Texas Company, 135 East 42nd Street, New York 17, N. Y.



TEXACO Lubricants, Fuels and Lubrication Engineering Service

TUNE IN: TEXACO STAR THEATER starring JIMMY DURANTE or DONALD O'CONNOR, on TV Sat. nights. METROPOLITAN OPERA radio broadcasts Sat. afternoons.

For More Information Circle No. 101 on Inquiry Card—Page 17

Mammoth press mashes auto into small bale...



Into the world's largest press goes a junk auto . . .

st



Two minutes later it emerges ... a bale measuring only 2x2x5 feet!



Power for the tremendous 1,018-ton hydraulic pressure was produced by five 100 H.P. Century motors.



J Century

Performance-Rated® MOTORS
provide the
1,018-ton "muscle"!

Century motors are Performance-Rated to fit all kinds of applications, including unusual ones like this. These 5 motors combine precisely the correct horsepower, speed, torque, frame protection and mounting for efficient operation of this huge press.

Whatever your motor needs, you can depend on Performance-Rated Century motors to develop all the performance that's built into your modern production equipment. And, because they are so carefully matched to the job, Century motors give maximum service life.

For Performance-Rated output, specify Century motors on your new equipment. For Performance-Rated replacement motors, call your nearby Century Authorized Distributor, or contact our branch office.



CENTURY ELECTRIC COMPANY

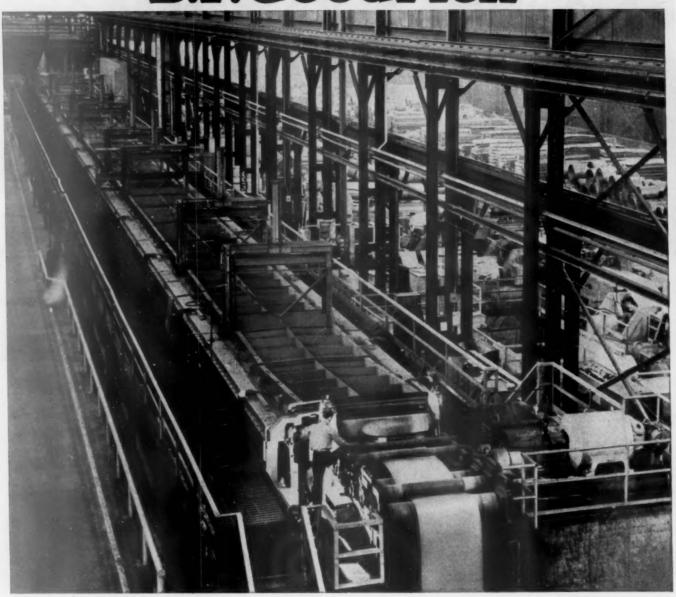
967

1/8 to 400 H.P.

1806 Pine Street . St. Louis 3, Missouri Offices and Stock Points in Principal Cities

PURCHASING published monthly, by PEEAYE. INC., subsidiary CONOVER-MAST PUBLICATIONS, INC., Publication Office, Orange, Conn. Editorial and Executive Offices, 206 E. 42nd St., New York 17, N. Y. Entered as second class matter August 9, 1942, at the Post Office in Orange, Conn., under the act of March 3, 1879. Subscription rates: United States, U. S. Possessions and Canada, 44 per year; elsewhere \$10 per year. Single copies 50c. December, 1954. Volume XXXVII, No. 6.

RESEARCH REEPS B.F. Goodrich FIRST IN RUBBER



Steel swims in a river of hot acid

A typical example of B. F. Goodrich improvement in rubber

Rushing through that tank of hot acid is a long ribbon of steel on its way to being shaped into automobile bodies. The acid bath removes every speck of rust and scale.

This job used to be done in tanks made of brick and concrete, but they would crack from the heat. Engineers believed rubber linings would be so easily damaged the acid would go through. A satisfactory tank seemed impossible until B. F. Goodrich came up with something entirely new in the way of rubber lining.

They worked out a combination

lining of hard rubber and soft rubber, called Triflex, that's protected by brick. They made the hard rubber layer in sections that overlap so the lining could expand and contract with heating and cooling, and so never break away from the steel tank.

away from the steel tank.

Acid leaks stopped wherever the
B. F. Goodrich lining was used. Costly
shutdowns for tank repairs were a
thing of the past.

Developing the first really practical lining for steel tanks is typical of the work that is constantly going on at B. F. Goodrich. Because every product B. F. Goodrich makes is constantly being studied to see how it can be improved from the user's standpoint, how it can be made to last longer and do a better job. Make sure you take advantage of these improvements by calling in your BFG distributor next time you need belting, hose or any one of the thousands of industrial products B. F. Goodrich makes. The B. F. Goodrich Company, Dept. M-335, Akron 18, Ohio,

B.F. Goodrich INDUSTRIAL PRODUCTS DIVISION

Mid sour lette Midwestern manufacturers can find the steels they use most often at one centrally located source of supply. For a detailed description of these products write, on your business letterhead, for Inland's Products Book.

DIRECTORY for Steel buyers

HOT AND COLD ROLLED SHEETS AND STRIP

ENAMELING IRON SHEETS

*TI-NAMEL SHEETS FOR ONE COAT PORCELAIN ENAMELING

*TI-CO...TIGHT-COATED
GALVANIZED SHEETS

ELECTRICAL SHEETS

TIN PLATE, ELECTROLYTIC AND HOT-DIPPED

SPECIAL COATED
MANUFACTURING TERNES

CARBON AND RAIL STEEL BARS

CARBON STEEL PLATES

*HI-BOND
REINFORCING BARS

HIGH STRENGTH STEELS

STEEL SHEET PILING

CARBON STEEL STRUCTURAL SHAPES

RAILS AND TRACK ACCESSORIES

*LEDLOY—WORLD'S MOST MACHINABLE STEELS

*RED-TOP FENCE POSTS

*4-WAY SAFETY PLATE

SIGN POSTS

*Registered Inland trademarks

d

ce

xt

ly

he

NG

INLAND STEEL COMPANY

38 South Dearborn Street

Chicago 3, Illinois



SALES OFFICES: Chicago • Milwaukee • St. Paul Davenport • St. Louis • Kansas City • Indianapolis Detroit • New York

PRINCIPAL PRODUCTS: Sheets • Strip • Plates Structural Shapes • Bars • Tin Mill Products • Rails and Track Accessories • Coal Chemicals

For More Information Circle No. 106 on Inquiry Card-Page 17



Power distribution systems that can effectively handle future demands are the surest way to avoid electrical obsolescence and costly rewiring. Local Graybar Representatives will work with you or your electrical contractor in the selection of wiring and equipment to meet today's needs...and tomorrow's.

"Plan in" future plant flexibility ... today

Two FREE booklets on new mineral-insulated wiring system

Mineral-insulated cables available via Graybar represent today's newest wiring method. Acting as its own conduit, m.i. cable trains to any contour . . . is unaffected by weather, corrosive vapors, cold or flame.

Type m.i. safety mineral-insulated cable—booklet provides complete information on conductor characteristics and

suggested applications.

2. NELEX Mineral-insulated heater cable — pertinent data on how it can lower heating costs and provide a higher safety factor is contained in this illustrated booklet.

Planning extra power capacities for future expansion is an important consideration in new plant construction. Today's pressure of electrical growth often outstrips power-carrying capacity long before the equipment itself becomes outmoded. This then, is the most important reason why it pays to call Graybar first on any wiring project. A Graybar Inside Construction Specialist can not only help you determine a power-distribution system to satisfy present and near-future needs, but also to "plan in" flexibility for long range expansion.

Over 100,000 different electrical items are distributed by Graybar through its nation-wide system of offices and warehouses. Complete catalog and quotation service covering them is available to help you work out job costs and specifications — for lighting, power, control, ventilation, communications, as well as wiring.

464-1712

CALL GRAYBAR FIRST FOR ...

GraybaR

ELECTRIC CO., INC.
420 Lexington Ave., New York 17, N. Y.



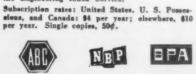
PURCHASING

The National Magazine of Industrial Purchasing

DIVANI 2. AABINATE		
B. P. MASTChairman of the Board		
HARVEY CONOVER President and Treasurer		
A. M. Morse, Jr. Vice President	VOL OT 11 /	054
A. H. DIXVice President, Research	VOL. 37, No. 6 DECEMBER, 1	Y 34
RAY RICHARDSAssistant Publisher		
E. HOWARDPromotion Manager	Management Means Coordination	65
EDITORIAL STAFF	21 Aids for the Annual Inventory	69
PAUL V. FARRELLManaging Editor		
G. H. GUTEKUNST, JRAssociate Editor	How Efficient Is Military Procurement?	71
DRAN S. AMMERTechnical Editor	PURCHASING Reports on Purchasing Opinion	75
A. N. WECKSLERWashington Editor	Do Make-or-Buy Decisions Follow Market Conditions?	
A. W. WILLIAMSContributing Editor	The Practical Art of Materials Planning	77
L. E. MCMAHONProduction Manager	Getting the Facts on Tool Performance	83
A. M. GRADY Production Assistant	Purchasing Department Files	86
E. C. ARINKArt Director	Everyday Examples of Profitable PurchasingF. C. Esser	88
DAVID BURKEAssociate Art Director	When A Third Party Guarantees Payment	91
ADVERTISING REPRESENTATIVES	The Christmas Gift Problem	93
ALEX G. GRAAM, Division Mgr Now York	Pictorial Pointers on Plant Safety	94
HARVEY CONOVER, JRNew York	Industry and Trade Statistics Brought Up to Date	
Hugh Robinson New York	R. W. Burgess and A. N. Wecksler	96
WAYNE W. GEYER, District MgrChicago		-
HUGH PELOTT, District MgrChicago	Buying Machine Tools	98
C. R. KINGSLEY, District MgrCloveland DWIGHT JENNETTLos Angeles	The Pulse of Business	101
JOSEPH T. McCourtDetroit	Commodity and Business Trends	101
	Economic Ordering Quantity GuideR. M. Elsworth and L. E. Saline	
205 East 42nd Street, New York 17, N. Y.	The New Epoxy ResinsF. S. Swackhamer	
	Don't Add to Your Legal LiabilityL. T. Parker	118
BRANCH OFFICES 737 NORTH MICHIGAN AVENUE Chicago 11, 14.	Efficiency and Production Can Be Measured in Foot Candles	
1900 EUCLID AVENUE	G. H. Gutekunst	168
998 NATIONAL PRESS BUILDING Washington 25, D.C.		
109 East Nine Mile RoadDetroit 20, Mich. Published monthly by Poesse, Inc.	MONTHLY FEATURES	
Subsidiary of		
CONOVER-MAST PUBLICATIONS, INC.	Washington Report	
Printed at Orange, Conn.	New Information for Your Catalog Files	17
CONOVER-MAST PUBLICATIONS	News of Your Suppliers	22
Purchasing	F. O. B	28
MILL & FACTORY	Highlights	67
AVIATION AGE CONSTRUCTION EQUIPMENT	New Products — Ideas	
Liquor Store	Office Equipment and Supplies	
BAR—RESTAURANT	Among the Associations	2 - 4
INSTITUTIONAL FEEDING AND HOUSING		
CONOVER-MAST PURCHASING DIRECTORY	Personalities in the News	
CONOVER-MAST BOOK DIVISION	Industrial Developments	
Copyright 1954 by Pecaye, Inc., in the U.S.A.	Buyer's and Seller's Mart	000
Purchasing is an independent journal, not the	Letters to the Editor	
official organ of any association. Established 1915 as "The Purchasing Agent". Consolidated with "The Executive Purchaser".	Index to Advertisers	. 302
Contents are indexed monthly and annually by the Engineering Index Service.		

FREE INFORMATION SERVICE

To get further information on anything mentioned in this issue, use Reader Service Card opposite page 17



STHART F HEINEL

our ip-

is n. ps elf on ct.

nly

fy

xi-

ed ces ice sts

la-12







To many people, Grinnell is known best as a producer of high quality malleable and cast iron pipe fittings or perhaps as

the manufacturer of Grinnell Automatic Sprinkler Systems. But there are other reasons behind Grinnell's leadership in the piping field. For example . . .



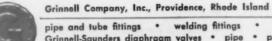
Grinnell makes PIPE HANGERS and SUPPORTS of all types ... from the simplest hanger for domestic service to engineered hangers which provide flexible but constant support for piping at such temperatures as 1000°F.

Grinnell manufactures special VALVES, including DIAPHRAGM VALVES . . . designed to handle corrosive fluids, gases, beverages, foods, compressed air, suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are costly factors.

Grinnell WELDING FITTINGS and FLANGES are available in many different metals.

Grinnell, in short, offers industry a full line of piping supplies - including pipe, valves, fittings, hangers and other piping products. GRINNELL is an experienced well-rounded team of piping specialists, backed by highest quality products. Call on Grinnell . . . "whenever piping is involved".

WHENEVER PIPING IS INVOLVED



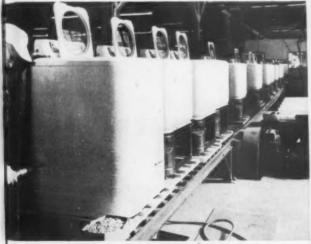
Coast-to-Coast Network of Branch Warehouses and Distributors

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies Grinnell automatic sprinkler fire protection systems Amco air conditioning systems industrial supplies

Users praise Phillips Cross-Recessed-Head Screws



REPUBLIC AVIATION finds the speedy, tight fastening of recessed head screws invaluable. On access plates, for instance, through which the plane is serviced and repaired, such screws are essential. Servicing of components is done many times and easier if such screws are used on access covers. Raymond Whalen fastens wing tip covering foreground, while B. Broman installs access plates using Phillips type recessed head screws.



APEX WASHING MACHINES are designed for a minimum of 20 years service. "One reason our machines have such a long life," states William A. Haverlock, superintendent of assembly, "is the highly protective coating offered by the enameled finish. By using Phillips screws, we have eliminated the danger of scratching this finish. This results in considerable saving in refinishing — and eliminates production headaches caused by interruption of assembly line."





THE FASTENERS
OF TODAY...
AND OF THE FUTURE

marks the spot
...the mark of extra quality

American Screw Company • Atlantic Screw Works, Inc. • The Blake & Johnson Co. • Central Screw Company • Continental Screw Company • The Eagle Lock Company Elco Tool and Screw Corporation • Great Lakes Screw Corporation • The H. M. Harper Co. • The Lamson & Sessions Company • National Lock Company • The National Screw & Manufacturing Co. • Parker-Kalon Div. General American Transportation Corporation • Pheoll Manufacturing Co. • Rockford Screw Products Co. • Scovill Manufacturing Co. • Shakeproof • The Southington Hdwe. Mfg. Company • Sterling Bolt Company • Wales-Beech Corp.

our 100 TH OF SUCCESSFUL MANUFACTURING EXPERIENCE



NEW Attractive Window Units in 3 models, for commercial and residential use



Package Units—2, 3, 5, 7½ and 10 tons.
Choice of Open or Semi-hermetic
Compressors . . . and 15 ton packaged
central type units.

Curtis

AIR CONDITIONING

Units Are Your Assurance of Satisfaction

The Curtis line is precision-built to assure a long life of trouble-free service. You can specify Curtis air conditioning equipment with the assurance that it will never let you down.

- √ Installation is fast and easy.
- ✓ Maintenance costs are low.
- ✓ Priced to meet competition.
- √ Smooth, quiet operation.
- ✓ A Curtis Unit for every job—
 a complete range of sizes and types.

See Curtis data in Sweets Catalog File, and write for your free copy of NEW Curtis Air Conditioning Manual.

RESIDENTIAL . . . INDUSTRIAL . . . COMMERCIAL



Residential Cooling and Heating Units



Air handling units, cooling towers,



Water Cooled Condensing Units through 30 tons

Curtis

REFRIGERATING MACHINE DIVISION

of Curtis Manufacturing Company 1908 Kienlen Avenue, St. Louis 20, Missouri

For More Information Circle No. 110 on Inquiry Card-Page 17

DESIGNED WITH DIVERSIPIPE

-to stop abrasion and corrosion

How to handle huge quantities of an extremely abrasive and corrosive phosphate rock slurry in this agricultural chemical plant was a real problem to its designers. What they needed was a "pipe" that could resist both the highly acidic water and the sharp rock particles, yet lend itself to the complicated layout with a minimum of fitting and prefabrication.

The answer came from the G.T.M.—Goodyear Technical Man—in the form of DIVERSIPIPE—husky, hand-built rubber hose, especially compounded and built to withstand the combined attack of corrosion and abrasion. Its quickly coupled, flanged ends and inherent flexibility made short work of the many bends and curves—greatly simplified installation.

So well satisfied were the engineers with the way DIVERSIPIPE fitted into the plant, they also specified it for the waste disposal line. This half-mile long, cross-country conduit was laid

directly on the ground—required no extra fittings. For similar help, see the G.T.M., your Goodyear Distributor, or write Goodyear, Industrial Products Division, Akron 16, Ohio.

YOUR GOODYEAR DISTRIBUTOR can quickly supply you with Hose, Flat Belts, V-Belts, Packing or Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."

 $\label{eq:Diversiple-T.M.} \textbf{Diversiple-T.M.}$ The Goodyear Tire Rubber Cempany, Akron, Ohlo

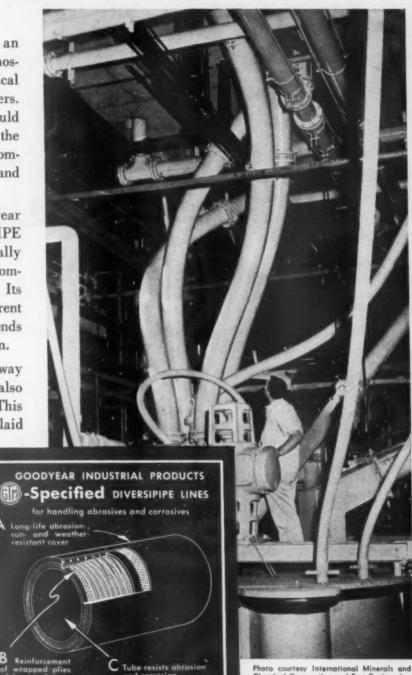


Photo courtesy International Minerals and Chemical Corporation and Rust Engineering Company.

GOODFYEAR

THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD" - every Sunday - ABC Radio Network - THE GOODYEAR TELEVISION PLAYHOUSE-every other Sunday-NBC TV Network

For More Information Circle No. 111 on Inquiry Card-Page 17

Six ways Long Distance pays in Purchasing

Purchasing men in many businesses—large and small—have found it pays to use Long Distance telephone service systematically. Here are some of the ways it saves you time, money and worry.



I Long Distance helps you keep pace with current price trends, so that you act fast when prices dip low.



2 It locates hard-to-find items by giving you quick, direct contact with suppliers everywhere.



3 It helps you combine orders from company units into carload orders at substantial savings.



4 It gets shipments underway on verbal orders—often cuts days off delivery time.



5 It follows up shipments and keeps them moving, avoids delays.



6 It arranges adjustments on claims against suppliers—tactfully, personally.

A call to your Bell Telephone Business Office will bring a representative to discuss these and other profitable uses of Long Distance in Purchasing.

BELL TELEPHONE SYSTEM



LONG DISTANCE RATES ARE LOW

Here are some examples:

New York to Philadelphia 50¢ New Orleans to Dallas \$1.25 Cleveland to Pittsburgh 60¢ Chicago to Denver \$1.60 Cincinnati to St. Louis \$1.00 Boston to Los Angeles \$2.50

These are daytime Station-to-Station rates for the first three minutes. They do not include the federal excise tax. Long Distance rates are even lower after 6 o'clock every night and all day Sunday.

Call by Number. It's Twice as Fast.

YOU
can be an

EXPERT

The recommendations made from the best few words. States of the best few words o

ON PACKINGS!

Yes, without even the usual "one easy lesson", your NYB&P Distributor can make it possible for you to select quickly the right NYB&P packing for any normal application!

First, he'll provide you with the unique double-disc Packing Selector shown above. By one simple movement of the dial you can select the correct NYB&P style number to pack your pump or hydraulic press for any combination of operating conditions.

In addition, your NYB&P Distributor will gladly give you the most helpfully informative packings catalog ever published! Within its 40 pages you'll find time-saving tables, formulas and installation data, as well as descriptions of NYB&P's extensive line of packings and gaskets. Highlighted in this catalog is the

famous "Line of Nine" which enables you to solve 90% of industrial packing problems from a simplified inventory of only 9 versatile types.

Call your nearest NYB&P Distributor today. If he isn't listed in your local phone or classified directory, write us.



"TIMING"® BELT DRIVES & V-BELTS

NYB&P INDUSTRIAL RUBBER PRODUCTS

NYB&P

NEW YORK BELTING & PACKING CO. 1 Market St., Passaic, N. J.

America's Oldest Manufacturer of Industrial Rubber Products

For More Information Circle No. 113 on Inquiry Card-Page 17

UNITED SPECIAL MILLED PRODUCT

An extensive variety of all sizes of automatic screw machines and hand screw machines, coupled with many types of "second-operation" equipment, including heat treating and modern centerless grinding, and the know-how to meet your requirements—is your guarantee that "UNITED" is a good source for your special milled products, in all available metals.

-when you think of fasteners think of United

SCREWS · NUTS · WASHERS
CLUTCH HEAD SCREWS
STAMPINGS

United Screw and Bolt Corporation

Chicago 8

Cleveland 2

NewYork 7



December 1, 1954

INVENTORY LIQUIDA-TION UNCERTAIN

Forecast on inventory trends is divided, with some Government sources maintaining that the period of liquidation has ended, and that an unturn in buying is underway.

ended, and that an <u>upturn in buying is underway</u>.

Roughly what happened during the last 12 months was a very sharp shift from inventory accumulation to liquidation. In the second quarter of 1953, the <u>rate of net inventory accumulation</u> was about \$5 billion a year. During the second quarter of this year, the rate of liquidation was at about \$4 billion a year.

With this sharp shift from accumulation to liquidation, there is optimistic view that the next shift will be equally sharp—that buying will start again to build up inventory.

FURTHER DROP SEEN

Divergent view uses the same set of statistics as justification for its position. It holds that there has been a sharp shift from accumulation to liquidation, that the cause of the shift was the <u>drop in production of durable goods</u>.

Based on the further cutback in military production, those

Based on the further cutback in military production, those who forecast a <u>continued liquidation of inventory</u> maintain that the cuts in overall inventory will continue at just about the same rate until early spring-and that even then there will be no marked change.

DURABLES VS.

This applies in the main to durable goods. Non-durables have held at a steady pace, and will continue the same course.

Next year construction industry will continue the boom levels established during the current year, and may even top them. This will reflect in both the materials and equipment inventories associated with the construction industry.

NO SACRIFICE SELLING

Even though liquidation of inventory may continue for some months, there is nothing hurried in the process. There has been little, if any sacrifice selling—and there has been little pressure on prices.

This stability of price levels is likely to continue. There is little latitude for price reduction with wages at a high level, and with a continued pressure by organized labor.

There is no problem of supply. The complex materials control machinery that was set up during the war in Korea has been



Everyone nowadays is bedeviled by the higher cost of things... so you can't really blame a man for buying on price.

"Save a dollar on a valve here, a few cents there—it all adds up."

But time so often tells a different story, when the dollar saved goes out the window in excessive piping maintenance costs. And this can run into a mighty big outlay when you consider the number of valves in a typical plant. Then it's easy to appreciate the great, good wisdom in buying valves and piping equipment of known quality, known dependability.

That's when you become a thrifty buyer—when you buy for value, and not for dubious savings... when you buy Crane for the lasting service you get, and the lower upkeep cost.

Crane Co., General Offices: 836 S. Michigan Ave., Chicago 5, Ill. Branches and Wholesalers Serving All Industrial Areas.



CRANE

VALVES . FITTINGS . PIPE . PLUMBING . HEATING

dismantled, and it will take a shooting war to revive the con-

Concern now is largely with markets and distribution, rather

than availability and supply.

Key to the marketing outlook is the prevailing high level of earnings, continued increase in the level of savings, and the large number of people who are gainfully employed.

Unemployment has been, and will continue to be a problem, but while even a small unemployment total is troublesome, the level of total employment remains high. This assures consumer

VOLUME MARKET WOOED

Distribution changes are developing. There is intense competition for volume markets, and with the high costs of labor virtually built into every product, the economies that can be achieved in production are limited.

At the same time, the competition for distributive outlets has not been without cost. Development of discount selling and so-called discount houses has posed some major problems in marketing.

Discount selling is a <u>direct threat to "fair trade" or</u> resale price maintenance, but the volume of appliance sales merchandised through discount houses has grown to be important.

There are divergent views on this trend in discount selling. The more tolerant view is that discount houses are meeting a basic need in merchandising-that like the early period in supermarkets, which had their beginning in barns with low overhead, the discount houses too will gradually adapt themselves and will at some future period offer a high level of consumer convenience and service.

DISCOUNT SELLING BUGABOO

At the same time, there is a trend toward fighting back at discount selling. Most of the appliances that are being discounted at retail have been "fair traded" by manufacturers. In fact, the discount house lives on nationally advertised trade names.

While there are many direct attacks on "fair traded" pricing, an indirect attack has been launched against producers who are "fair trading" their products, but whose product prices are still being footballed by discount sellers.

FREE ENTERPRISE ON TRIAL

Government view on economic trends is that the period of readjustment from the Korean inflationary buildup is just about over, and that many of the measures that were taken during the last 18 months to prime the economy can be relaxed.

Significant factor is that the Administration will continue to stand by to put out any major economic fires. Thinking behind this policy is that:

1. Violent political currents are stirring in the world -that our system of free enterprise is on trial, and that the Government cannot stand aloof from the private economy, but must stand ready to help maintain a stable prosperity.

2. Government action must be preventive, not trust exclu-

sively to therapeutic measures.

3. Whatever actions the Government takes, these must inspire favorable expectations about the future. This suggests prompt action when needed, avoidance of extravagance, and reduction in taxes.



"Machine tool production increased 35 to as much as 75 per cent"—users of leaded steels report. The addition of lead acts as a lubricant reducing friction between chip and tool. The beneficial results—faster machining speeds—much longer tool life—and vastly improved product finish. With normal heat treating, mechanical properties such as yield strength, tensile strength and ductility are unaffected.

You can obtain similar manufacturing benefits by specifying Aristoloy leaded alloy or Ledloy* (leaded) carbon grades. Available in all A.I.S.I. or S.A.E. standard analyses—write or call today for information about application of free cutting leaded steels to your products.

*Inland Ledloy License

- DISTRICT OFFICES ---

P. O. Box 1633 Tulsa, Oklahoma

315 Hollenbeck Street Rochester, New York

117 Liberty Street New York, New York

711 Prudential Building Houston 25, Texas

80 King Street West Toronto, Ontario, Canada

Monadnock Building San Francisco 5, Calif.

325 W. 17th Street

Los Angeles 15, Calif.

First National Bank Bldg. Jamestown, New York 1578 Union Commerce Bldg. Cleveland, Ohio

> 176 W. Adams Street Chicago, Illinois

1807 Elmwood Avenue Buffalo, New York

7251 General Motors Bldg. Detroit, Michigan

143 Washington Avenue Albany, New York

611 Beury Building Philadelphia 40, Penna.

625 James Street Syracuse, New York

3102 Smith Tower Seattle, Washington



COPPERWELD STEEL COMPANY

(STEEL DIVISION)

WARREN, OHIO

For export—Copperweld Steel International Company, 117 Liberty Street, New York
For More Information Circle No. 116 on Inquiry Card—Page 17

SPECIAL SERVICE FOR READERS

You will want additional information about the equipment, materials, services or methods described or advertised in this issue of PURCHASING.

As a special service, our Reader Service Department will gladly and promptly arrange to have manufacturer's literature regarding any item in this issue sent directly to you.

Two cards are provided—one for you, and one for the individual to whom you pass your copy of PURCHASING:

EACH ITEM ADVERTISED HAS A NUMBER

EACH ITEM DESCRIBED HAS A

DECIDE ON WHICH ITEMS YOU WANT MORE INFORMA-TION

CIRCLE THE CORRESPONDING
NUMBERS ON THE READER
SERVICE CARD ON THIS PAGE

SIGN THE CARD AND DROP IT IN THE MAIL. NO POSTAGE NECESSARY

PURCHASING WILL HAVE THE MANUFACTURER SEND YOU THE LITERATURE WITHOUT DELAY

READER SERVICE is a monthly feature of PURCHASING Magazine designed to help the reader get all the information needed with the minimum of time and effert.

NAMETITLE									-	PURCHASING Reeder Service Card								
COMPAN	Y												-	DI	CEN	BER	198	54
ADDRESS			CITYSTATE									(not good after 2-15-55						
		C	ircle	numi	нега (of ite	ıms e	lescrib	ed or	adver	tised	in t	his is	sue.				
1 2 11 12 22 32 31 32 41 42 42 42 42 42 42 42 42 42 42 42 42 42	33 33 43 53 63 63 73 83 103 113 143 163 193 203 203 223 243 253 263 273 283 283 283 283 283 283 283 283 283 28	44 34 44 44 64 74 84 94 1014 1124 1134 1154 1174 1184 1174 1204 2214 2234 224 224 224 224 224 224 224 224 2	5 15 35 45 45 55 65 78 85 95 1015 115 125 115 125 125 218 223 245 225 245 225 225 225 225 225 225 225	6 16 26 36 44 46 56 66 86 96 116 126 116 126 1176 1186 216 226 226 226 226 276 286 296	7 17 37 47 67 67 77 67 77 107 117 117 117 120 117 120 1217 2217 2	8 18 28 38 48 68 98 108 118 128 138 148 158 168 218 228 248 228 248 278 289 298	9 19 39 39 49 69 7 9 9 9 9 10 10 13 13 13 13 13 13 13 13 13 13 13 13 13	10 20 30 40 50 60 70 80 90 1100 1120 1130 140 1150 160 1170 210 220 220 220 220 220 220 220 220 22	301 311 321 321 321 321 321 321 321 321 32	302 312 322 343 343 352 362 392 402 412 442 452 472 492 502 512 552 552 552 552 552 552 552 552 55	303 313 323 323 343 363 363 373 383 393 403 443 443 443 443 443 443 453 463 553 553 553 553 553 553 553 553 553 5	304 314 334 334 364 374 404 424 434 454 454 454 454 554 554 554 554 55	308 315 325 335 345 365 375 365 375 403 385 395 403 445 445 445 445 445 515 505 515 525 545 555 545 555 565 575 585 575 595	306 314 326 326 346 356 376 426 426 446 456 446 456 466 516 526 536 546 556 576 576 576	307 317 327 327 327 327 327 327 327 327 327 407 427 457 457 457 457 557 557 557 557 557 55	308 318 328 328 348 348 368 378 408 428 428 448 444 448 448 458 488 518 528 518 528 558 558 558 558	309 319 329 339 349 309 309 309 409 419 429 439 449 469 519 519 519 519 519 519 519 519 519 51	310 320 330 350 350 370 380 400 410 420 430 446 470 480 531 531 544 557 56 56

POSTAGE
WILL BE PAID
BY
PURCHASING

No Postage Stemp Necessary If Mailed In the United States

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 16734, SEC. 349, P. L. & R., NEW YORK, N. Y.

PURCHASING
205 EAST 42nd STREET
NEW YORK 17, N. Y.

READER SERVICE DEPT.

SPECIAL SERVICE FOR READERS

You will want additional information about the equipment, materials, services or methods described or advertised in this issue of PURCHASING.

As a special service, our Reader Service Department will gladly and promptly arrange to have manufacturer's literature regarding any item in this issue sent directly to you.

Two cards are provided—one for you, and one for the individual to whom you pass your copy of PURCHASING:

POSTAGE
WILL BE PAID
BY
PURCHASING

No Postage Stamp Necessary If Mailed In the United States

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 16734, SEC. 349, P. L. & R., NEW YORK, N. Y.

PURCHASING

205 EAST 42nd STREET NEW YORK 17, N. Y.

READER SERVICE DEPT.

PURCHASING TITLE NAME Reader Service Card COMPANY DECEMBER 1954 (not good after 2-15-55) CITY STATE ADDRESS Circle numbers of items described or advertised in this issue 310 320 330 340 350 370 380 390 440 440 440 440 450 460 470 550 550 550 550 550 560 560 600 312 322 332 332 362 372 382 382 382 402 412 442 442 442 452 442 472 482 502 512 512 552 552 552 552 552 552 313 323 333 343 353 363 373 383 393 403 443 443 443 453 463 473 483 553 553 553 553 553 553 316 326 336 336 356 366 386 386 406 416 426 436 446 456 456 506 516 526 556 556 576 586 317 327 337 357 357 367 377 397 407 417 427 437 447 457 457 507 517 557 557 557 557 318 328 338 358 368 368 368 388 398 408 448 448 458 468 478 508 518 558 558 558 558 568 568 Additional Information wanted

EACH ITEM ADVERTISED HAS A NUMBER

EACH ITEM DESCRIBED HAS A NUMBER

YOU WANT MORE INFORMA-TION

CIRCLE THE CORRESPONDING NUMBERS ON THE READER SERVICE CARD ON THIS PAGE

SIGN THE CARD AND DROP IT IN THE MAIL. NO POSTAGE NECESSARY

PURCHASING WILL HAVE THE MANUFACTURER SEND YOU THE LITERATURE WITHOUT DELAY

READER SERVICE is a monthly feature of PURCHASING Magazine designed to help the reader get all the information needed with the minimum of time and effort.

NEW INFORMATION FOR YOUR

Catalog Files



DIE CASTING ENHANCES PRODUCT DESIGN

16

m

LS

A

IG

ER

GE

IT

GE

HE

OU

UT

A 28-page booklet, profusely illustrated in two colors, describes the die casting process and its application. It discusses the process as it affects product design and surface finish.

American Zinc Institute

Circle No. 1 on Inquiry Card-Page 17

MAGNET WIRE IN HIGH TEMPERATURE INSULATION

Full information on magnet wire, both copper and aluminum is contained in an 84-page, profusely illustrated book (C-79-12). It has charts and tables. High temperature insulations are dealt with.

Anaconda Wire & Cable Co.

Circle No. 2 on Inquiry Card-Page 17

DIMENSION HARDWOOD CUTS COSTS

A colorful booklet tells in text and pictures how the manufacturer can cut costs and produce a better product by availing himself of hardwood dimension parts.

Hardwood Dimension Manufacturers Association

Circle No. 3 on Inquiry Card-Page 17

WELDS PRODUCED IN SECONDS

Illustrated brochure supplies information on cold pressure method of producing welds from nonferrous metals in seconds. Many actual photographs illustrate data on tools and dies.

Utica Drop Forge & Tool Corp.

Circle No. 4 on Inquiry Card-Page 17

HOW TO SELECT THE PROPER PUMP

Users of circulating and coolant pumps should be interested in bulletin, Form 7074. It deals with a complete line of motor pumps. A pictorial index facilitates selection of type pump needed.

The Ingersoll-Rand Co.

Circle No. 5 on Inquiry Card-Page 17

EASILY MAINTAINED, ADJUSTABLE COMPRESSORS

Catalog C-100 describes in 26 illustrated pages a line of air compressors in sizes from $\frac{1}{2}$ hp to 50 hp (500 cfm). Complete specifications are given. They are designed for easy maintenance.

Curtis Pneumatic Mch'y Div., Curtis Mfg. Co.

Circle No. 6 on Inquiry Card-Page 17

TECHNIQUES OF USING WIRE ROPE

Users of wire rope will find a fund of information in bulletin No. 5448, titled "Ropeology." It shows special boat slings, tow lines, cable assemblies, slings and cable used in aircraft.

Macwhyte Co.

Circle No. 7 on Inquiry Card-Page 17

WHAT TO LOOK FOR IN SCREWS

A condensed catalog aims to ease screw buying problems by giving general information on all principal types of screws, bolts, threaded products and cold-headed specials of all kinds.

Elco Tool & Screw Corp.

Circle No. 8 on Inquiry Card-Page 17

LEADED ALLOY STEEL MACHINES FAST

Bulletin No. 14-5 covers the properties of an alloy steel, claimed to be the world's fastest machining type in its carbon range (.40 carbon). Included are case studies showing typical cost savings.

Joseph T. Ryerson & Son, Inc.

Circle No. 9 on Inquiry Card-Page 17

CAPS, FILLER NECKS SOLVE PROBLEMS

A 12 page booklet contains engineering data on a standard line of stock caps and related necks for various fluid tank installations. Their immediate availability solves problems for equipment makers.

Eaton Mfg. Co., Stamping Div.

Circle No. 10 on Inquiry Card-Page 17

PROPER PACKAGING PROTECTS MERCHANDISE

A 20-page booklet, titled "Creative Package Design," shows how corrugated boxes are designed to satisfy special requirements of product protection, marketing channels, and shipping and handling methods.

Hinde & Dauch

Circle No. 11 on Inquriy Card-Page 17

INSULATED SMALL WIRE, CABLE

Data sheets on miniature and subminiature wires, cables, insulated with Teflon in the form of tape, multi-wrapped and fused, have been assembled into a handy brochure. The wires are chemically inert.

Tensolite Insulated Wire Co., Inc.

Circle No. 12 on Inquiry Card-Page 17

FASTENERS LOWER PRODUCTION COSTS

How two and three item assembly has been eliminated in a line of modern fasteners that hold production costs to the barest minimum is detailed in bulletin No. 31. Specifications are given.

Standard Locknut & Lockwasher, Inc.

Circle No. 13 on Inquiry Card-Page 17

SELECTING FRACTIONAL OR NUMBERED GAGES

A 33/4" x 6" desk or tool box gage selector is available for use in choosing the right ring or plug gage in fractional or numbered sizes. It also gives a concise definition of the classes.

Threadwell Tap & Die Co.

Circle No. 14 on Inquiry Card-Page 17

APPLYING BASIC VALVE DESIGNS TO PIPING

Serving as a handy refresher for specifiers and buyers of piping equipment in the application of basic valve designs is a 20-page, two-color, profusely illustrated pamphlet.

Crane Co

Circle No. 15 on Inquiry Card-Page 17

POWER DRIVER HOLDS SCREWS MAGNETICALLY

How to utilize the force of modern high energy permanent magnets for holding screws, bolts or nuts in assembly operations is explained in a 24-page, 2-color manual on power screw drivers.

Magna Driver Corp.

Circle No. 16 on Inquiry Card-Page 17

SILICONE RUBBER PARTS TAILOR-MADE

Supplement "B" to the Rubber Data Handbook details a method of custom compounding silicone rubber to the customer's specification to achieve an improved product for a set purpose at lower cost.

Acushnet Process Co.

Circle No. 17 on Inquiry Card-Page 17

HOW TO IMPROVE QUENCHING PRACTICE

The properties ideal in a quenching oil for improved quenching practice are discussed in 24-page illustrated brochure with authoritative performance charts and comparison tables.

Gulf Oil Corp.-Gulf Refining Co.

Circle No. 18 on Inquiry Card-Page 17

HELPS SOLVE WIRE AND TUBING PROBLEMS

Catalog No. 54 includes 44 pages full of information concerning wires and cables, plastic tubing and sleeving and identification markers. It contains ordering information to speed service.

William Brand & Co., Inc.

Circle No. 19 on Inquiry Card-Page 17

DIAMOND WHEELS, HONES MEET MOST NEEDS

A comprehensive assortment of standard sized diamond grinding wheels and hones are dealt with in catalog No. 1233. It should permit selection of a suitable wheel or hone for most requirements.

Norton Co.

Circle No. 20 on Inquiry Card-Page 17

SELF-STICKING TAPES HAVE VARIED USES

Technical data, descriptions, photos and application information on pressure-sensitive electrical and non-electrical tapes form the text of a 20-page catalog. Both types are made for many uses.

Insulation Manufacturers Corp.

Circle No. 21 on Inquiry Card-Page 17

COMBINATION FILTERS EFFECTIVELY CLEAN COOLANTS

A two-stage combination magnetic and fabric filter is described in a sixteen page bulletin, No. 350-IK. It solves coolant cleaning problems large and small. Twenty point check list is a guide to equipment selection.

Barnes Drill Co.

Circle No. 22 on Inquiry Card-Page 17

PRECISION THREADED FASTENERS CUT COSTS

A 32-page, two color catalog, describing in pictures and text a line of precision threaded fasteners, also stresses customer cost and time savings by ordering standard instead of special screws.

Standard Pressed Steel Co.

Circle No. 23 on Inquiry Card-Page 17

LIFT TRUCKS MOVE, STORE MULTI-UNIT LOADS

Pictured and described in an attractive 12 page brochure, P-673B, is the moving and storing of many types of multi unit loads by pallet hand lift trucks. Photos explain lifting mechanism.

Yale & Towne Mfg. Co.

Circle No. 24 on Inquiry Card-Page 17

SELECTIVE COMPILATION OF BEARING SIZES

More than 600 of the most widely used sizes of oil retaining porous bronze bearings are listed in Stock List No. 4. Elimination of those infrequently used saves user's time. It also deals with applications

Bound Brook Oil-less Bearing Co.

Circle No. 25 on Inquiry Card-Page 17

SOLVE SASH MAINTENANCE PROBLEMS

"Complete Sash Maintenance," a 16-page brochure, authoritatively discusses such problems as painting rusted metal, sill restoration and caulking and glazing, how sash deteriorates, and mastic glazing vs putty.

Tremco Mfg. Co.

Circle No. 26 on Inquiry Card-Page 17

APPLICATIONS OF CHAINS AND ATTACHMENTS

The size no., metal thickness, approximate links per foot, link width, approximate tensile strength and shipping weight are supplied on a complete line of chain products in a 16-page, 2-color catalog.

Risdon Mfg. Co., John M. Russell Div.

Circle No. 27 on Inquiry Card-Page 17

Circle Card Opposite Page 17
to Obtain These Catalogs
Additional Catalogs on Page 20

this simple idea cuts V-Belt costs

- as a V-Belt bends, feel its sides change shape!

Pick up any V-Belt that has straight sides (Fig. 1) and bend it as if it were going around a pulley. At the same time, grip its sides with your fingers! You will feel the sides bulge out as in Fig. 1-A. Clearly, the bulging belt is forced to press unevenly against the V-pulley—and this concentrates wear at the points shown by arrows (Fig. 1-A).



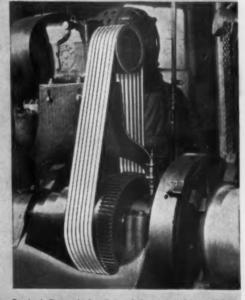


Now bend the belt with CONCAVE SIDES
(U.S. PAT. 1813696)
. . . the GATES VULCO ROPE (Fig. 2)

Instead of bulging, the precisely engineered CONCAVE SIDES merely fill out and become perfectly straight. This belt, when bent, precisely fits its sheave groove (Fig. 2-A). The sides press evenly against the V-pulley. Therefore, wear is distributed uniformly across the full width of the Gates Vulco Rope—and this means longer belt life and lower belt costs for you!







Typical Gates Vulco Rope Drive—the Gates V-belts are built with Concave Sides to insure longer belt wear.

When you buy V-belts, be sure to get the V-belt with the CONCAVE SIDES — the Gates Vulco Repet

THE GATES RUBBER COMPANY DENVER, U.S.A.



Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

STANDARD VALVES ADAPT TO SPECIAL NEEDS

Sizes and engineering data on many types of valves are covered in a 24-page, two-color catalog. A table recommends lubricants. It is noted that standard valves can be modified to special needs.

Kohler Co., Precision Controls Div.

Circle No. 28 on Inquiry Card-Page 17

SWISS-PATTERN FILES FINISH INTRICATE PARTS

A 16-page, two color catalog is a guide to the proper uses and ordering of Swiss-Pattern files that are ideal for finishing delicate, intricate parts. A diagram gives coarseness range.

Heller Brothers Co.

Circle No. 29 on Inquiry Card-Page 17

STEEL FORGINGS MINIMIZE WASTE METAL

Dealing with facilities for producing steel forgings, a 16-page, 2-color brochure stresses how these forgings reduce machining costs and wasted metal because contours conform to finished parts.

American Brake Shoe Co., Amforge Div.

Circle No. 30 on Inquiry Card-Page 17

CRANK PRESSES FROM 50 TO 400 TONS

Catalog 9-D (20-pages, 2-colors) illustrates various straight side single crank presses with capacities from 50 to 400 tons. They are arranged for many accessories such as die cushions and knockouts.

E. W. Bliss Co.

Circle No. 31 on Inquiry Card-Page 17

BLAST CLEANING USES NEWER ABRASIVES

A full line of blast cleaning barrels is covered in bulletin No. 225. Specifications are given for sizes from 1½ cu ft to 27 cu ft. It describes cost savings with unit using the new abrasives.

Pangborn Corp.

Circle No. 32 on Inquiry Card-Page 17

AUTOMATIC BUFFS FOR SPECIFIC NEEDS

An attractively designed 12-page catalog covers a line of automatic buffs designed to meet specific needs in a variety of industrial finishing applications, such as contoured surfaces, etc.

American Buff Co.

Circle No. 33 on Inquiry Card-Page 17

A GUIDE TO STRAPPING TOOLS, ACCESSORIES

A six-page brochure contains complete descriptions and how-to-order information on tensioning tools, sealers, seals, cutters, strapping, accessories and combination units. Photos illustrate applications.

A. J. Gerrard & Co.

Circle No. 34 on Inquiry Card-Page 17

LUBRICATION, STEAM, LIQUID, AIR FITTINGS

Complete information, specifications and prices on adapters, couplings, nipples, hose stems, tubing and other units for lubrication, steam, liquid or air applications are included in catalog No. 17-D.

J. N. Fauver Co., Inc.

Circle No. 35 on Inquiry Card-Page 17

AUTOMATIC TURRET LATHES INCREASE OUTPUT

Some thirty case histories of record performances with a line of automatic lathes are detailed in a 24-page fully illustrated catalog. Line drawings point up the operational techniques employed.

Potter & Johnson Co.

Circle No. 36 on Inquiry Card-Page 17

STEEL SCAFFOLDING, HOISTING TOWERS

Catalog No. 56 consists of a complete description of the various parts employed for erection of tubular steel scaffolding and materials hoisting towers. Complete line drawings are supplied.

Beaver Art Metal Corp.

Circle No. 37 on Inquiry Card-Page 17

SPACE HEATING WITH HEAVY FUEL OIL

All models of fuel oil heaters are covered in an attractive 20-page, 2-color bulletin, No. 743. There is detailed information on dimensions, capacities and installation. Tables help select proper heater.

Manning and Lewis Enrg. Co.

Circle No. 38 on Inquiry Card-Page 17

AIDS TO BETTER CASTINGS BUYING

A glossary of terms for users of iron castings fills 36 pages with explanation of over 150 technical terms used by suppliers and users of castings.

International Nickel Co.

Circle No. 39 on Inquiry Card-Page 17

CHARACTERISTICS OF VARIOUS SYNTHETICS

Properties of synthetic resins, plasticizers, pentaerythritol, and nonionic surface-active agents are listed in an eight page brochure. Their general applications in industry are given.

Hercules Powder Co., Synthetics Dept.

Circle No. 40 on Inquiry Card-Page 17

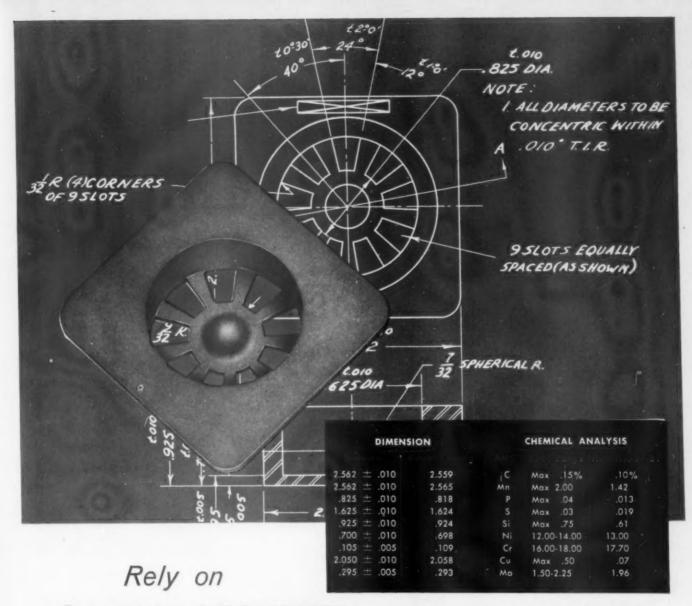
PLATING EQUIPMENT DESIGNED FOR BETTER PRODUCTS

A catalog describes a line of heavy duty production plating barrels, single and multiple plating units, cylinder loading and unloading stands, alkali cleaning and rinsing units. All are designed to achieve better products.

George A. Stutz Mfg. Co.

Circle No. 41 on Inquiry Card-Page 17

Circle Inquiry Card Opposite Page 17
to Obtain These Catalogs



Crucible ACCUMET investment castings for dimensional and metallurgical accuracy ...

This intricately shaped aircraft instrument part had to be held to rigid specifications both in size and in chemical analysis of the steel.

That's why Crucible ACCUMET® precision castings were used. For Crucible's lost wax method of casting, and its long experience as the country's leading producer of fine special

purpose steels, combine to bring you accurate castings of the highest quality. But the two tables shown below actually tell the story better than words can. They show how closely ACCUMET castings are held to original specifications.

The next time you have a job where quality and close tolerances are needed, be sure to investigate the advantages of ACCUMET precision castings - call Crucible.



CRUCIBLE

first name in special purpose steels

ACCUMET INVESTMENT CASTINGS

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA. REX HIGH SPEED . TOOL . REZISTAL STAINLESS . ALLOY . MAX-EL . SPECIAL PURPOSE STEELS Canadian Distributor — Railway & Power Engineering Corp., Ltd.

NEWS OF YOUR Suppliers



W. F. Morrissey has been named New England district sales manager



W. F. Morrissey

for the American Chain Division, American Chain & Cable Co., Inc., Bridgeport, Conn. He will headquarter in South Boston, Mass.

H. G. Cheney has been named midwestern regional sales manager for the Electronic Tube Division of Westinghouse Electric Corp., Pittsburgh. He will headquarter in the Merchandise Mart Building in Chicago.

Adamas Carbide Corp., Kenilworth, N. J., has appointed Pierce Frauenheim as a sales representative in western Pennsylvania. At the same time, Don R. Manecke was made sales representative in Wisconsin, and the R. C. Dombrow Company was named to handle northern Illinois and northern Indiana.

The appointment of Walter H. Prine as head of the Electroplating-Chemical-Catalyst Section of the Nickel Sales Department has been announced by the International Nickel Co., Inc., New York.

Telecom, Inc., Kansas City, Mo., has named W. P. Hercules as sales manager. He will supervise all sales personnel as well as the firm's distributor and dealer organization.

In a series of personnel changes in the sales department of Inland Steel Co., Chicago, James C. Fausch was appointed assistant manager of the tin plate and export division, Samuel G. Wagner replaced Mr. Fausch as assistant manager of the sheet and strip division, and William H. Eichengreen was named assistant manager of the division to handle sales of secondary products. William D. Truesdale, Jr., was made manager of the claim division.

Matt Conley, sales engineer for the Timken Roller Bearing Co., Canton, O., has been appointed district manager for the Timken Company's Steel and Tube Division in Milwaukee, At



M. Conley

the same time, it was announced that Bruce Wise and John Szuhay had completed their sales training course and been assigned to Timken offices. Mr. Wise goes to Los Angeles and Mr. Szuhay to Cleveland.

The addition of two application engineers to the New York and Newark sales offices of the Reliance Electric & Engineering Co., Cleveland, has been announced. Peterson Nesbit is the new member of the New York office, and Albo D. Bua goes to Newark.

Fred C. Stockinger has been made west coast district manager for the Bay



F. C. Stockinger

State Abrasives Products Co., Westboro, Mass.

The Elwell-Parker Electric Co., Cleveland, has named Landes, Zachary and Peterson Co., Denver, as distributor in Colorado, Wyoming, Utah and New Mexico.

Russell Herig, formerly associated with Nye Tool Co., has been appointed field sales manager for Beaver Pipe Tools, Inc., Warren, Ohio.

Charles E. Vanderpool has been promoted to the post of sales manager for the Rotor Tool Co., Cleveland.

Lukens Steel Co., Coatesville, Penna., has announced three promotions in its Sales Division. W. Harrison Lackey, former manager of plate sales, is now manager of field sales. Charles A. Carlson, Jr., is now manager, carbon plate sales, and Robert L. Cahoon, former assistant manager of clad and foreign conversion, takes over as manager, alloy plate sales.

American Brake Shoe Co., New York, has appointed N. George Belury as sales vice president.

(Please turn to page 24)

better

faster

cheaper

automationally with

GM

SEND FOR FREE BROCHURE

This new, illustrated, factpacked brochure

tells how GM
Steel Tubing can
help solve design
and production
problems. Send

today for your free copy.

HEADED OR INSERT TYPE PUSH RODS

From the initial strip steel to the final packaged product, one continuous process makes GM Steel Tubing and converts it into finished push rods.

Here is a perfect example of how modern "automation" can produce better products faster and for less money.

Why not find out today how Rochester Products and GM Steel Tubing can automationally do the same for you.

SEE SWEET'S PRODUCT DESIGN FILE

ROCHESTER



PRODUCTS

DIVISION OF GENERAL MOTORS

ROCHESTER, N.Y., U.S.A.

ALSO MANUFACTURERS OF ROCHESTER CARBURETORS AND ROCHESTER CIGAR LIGHTERS

For More Information Circle No. 119 on Inquiry Card-Page 17

Peter Gasperini has joined the sales department of Cooper Alloy Corp., Hillside, N. J. He has been assigned to the Valve & Fitting Division.

T. Kenneth Haven, former executive vice president of Reichhold Chemicals,



T. K. Haven

Inc., has been appointed vice president of the Detrex Corp., Detroit.

George Bell, a veteran among aircraft industry suppliers, has been named to head up the west coast operations for Resistoflex Corp., Belleville, N. J.

The appointment of L. P. Kahler as product manager, Paint Sales Division, has been announced by Joseph Dixon Crucible Co., Jersey City, N. J.



H. M. Wentley

Stone Container Corp., Chicago, has made Howard M. Wentley general manager of its Pittsburgh division.

Pesco Products Division of Borg-Warner Corp., Bedford, O., has opened a new district sales office at 725 Union Arcade Bldg., Davenport, Iowa.

William J. Freund is the sales manager of the new Electric Car Division of Victor Adding Machine Co., Chicago. He will headquarter in Chicago.

Theodore I. Dunn, Jr., has been appointed assistant vice president of sales for Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y. His chief responsibility is the supervision of eastern sales. At the same time, it was announced that James M. Bell will take over the post formerly held by Mr. Dunn, Pacific Coast sales manager.

Walter S. Snodell has been named sales manager of the Special Products Division, Acme Steel Co., Chicago. He succeeds W. M. Minehart, who is retiring after 38 years with the company.

Ward H. Pitkin is now general sales manager of Oliver United Filters, Inc., New York.

Rudolf Torbico, formerly associated with Moore-Wright Company and Ford and General Motors, has joined the Carboloy Department of General Electric Co., Detroit, as a field sales representative.

Turbine Equipment Co., New York, has advanced Harold Sinclair from president to chairman of the board,



H. Sinclair



D. Miller

and Donald F. Miller from executive vice president to president. Paul E. Linthwaite, formerly sales engineer, has been made vice president in charge of machinery sales.

The naming of William E. Bailey as Chicago industrial area representative for industrial air conditioning equipment has been announced by **Dravo Corp.**, **Pittsburgh**.

The new manager of the Chicago branch office of the Colson Corp., Elyria, O., is John Schippers. He was formerly Chicago branch manager for Service Caster & Truck Corp.

The promotion of two sales executives has been announced by Exide Industrial Division of the Electric Storage Battery Co., Philadelphia. Charles H. Leet, Pittsburgh branch manager since 1949, has been transferred to the firm's larger Chicago office as assistant branch sales manager. R. L. Kegg, formerly branch sales engineer at Pittsburgh, succeeds Mr. Leet as branch sales manager there.

Harry F. Ogden, Jr., has been named sales manager of the Precision Thermometer & Instrument Co., Philadelphia.

J. J. Langlois has been named general sales manager of General Dry



J. J. Langlois

Batteries, Inc., Cleveland. He was formerly national sales manager of the visible records division of Remington Rand Inc.

The Jackson Supply Co., Mobile, Ala., has been appointed a distributor of the Republic Rubber Division, Lee Rubber & Tire Corp., Youngstown, Ohio.

D. W. Anderson has been made sales manager for the newly-formed national sales organization of the Instrument Division of Clary Multiplier Corp., San Gabriel, Calif.

Gar Wood Industries, Wayne, Mich., has appointed H. J. Howerth as product



H. J. Howerth

sales manager for Gar Wood truck winches and cranes. He had been assistant sales manager of hydraulic hoists and dump bodies.

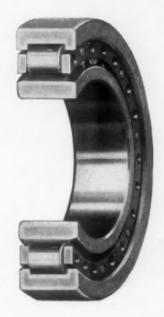
Additional News of Your Suppliers will be found following the Industrial Development section

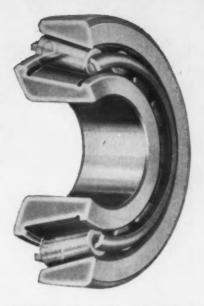
WHATEVER YOUR ROLLER BEARING APPLICATION

specify BOWER!

Earthmovers, jet turbine engines, rolling mill equipment, truck axlesyou name it! Bower builds a complete line of tapered, straight and journal roller bearings including a size and type to fit your product. What's more, these dependable bearings have proved themselves in virtually every conceivable type of application. Their built-in quality, skillful engineering and advanced design features provide such important bearing advantages as reduced wear, longer life and lower maintenance requirements. Let a Bower engineer give you full details on the complete Bower line.

> BOWER ROLLER BEARING COMPANY DETROIT 14, MICHIGAN





BOWER TAPERED ROLLER BEARINGS INCORPORATE ADVANCED SPHER-O-HONED DESIGN! Spherically generated roll heads and higher flange with larger, two-zone contact area reduce wear, improve roller alignment and virtually eliminate "end play." This helps hold adjustment and pre-load longer and better. Larger oil groove provides positive lubrication.

BOWER STRAIGHT ROLLER BEARINGS ARE BUILT TO CARRY MAXIMUM LOADS! Integral two-lip race increases rigidity—keeps rollers in proper alignment at all times. Steel cage allows free movement of rollers between races during normal operation. High-grade alloy-steel rollers and races are precision-ground for quieter, smoother operation.

AUTOMOTIVE RAILROAD FARM FA



For More Information Circle No. 120 on Inquiry Card-Page 17



the dirt flies faster-now with MUSCLES OF STEEL

Straining laborers plying pick and shovel are a bygone memory because of today's excavating and road-building equipment. Modern power shovels and draglines use *muscles of steel*—rugged wire rope—to keep the dirt flying fast.

Helping to clear the way for needed highways is another of the important ways in which Wickwire Rope contributes *muscle* to America's might. You'll find Wickwire Rope, too, in the mines and the quarries... in the oil fields and logging camps... with the fishing fleets... and in numerous materials handling operations. Whatever the job may be, the extra care and quality fabrication that goes into Wickwire Rope proves itself in longer life, more economical service and utmost reliability.

every industry benefits from wire rope

WICKWIRE ROPE



PRODUCT OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION

THE COLORADO FUEL AND IRON CORPORATION—Abiliana (Tox.) - Denver - Houston - Odessu (Tox.) - Phoenix - Suit Lake City - Tuisa
PACIFIC COAST DIVISION—Los Angoles - Oakland - Portland - San Francisco - Seattle - Spokane
WICKWIRE SPENCER STEEL DIVISION—Boston - Bullaio - Chattanooga - Chicago - Detroit - Emlanton (Pa.) - New Orleans - New York - Philadelphia

For More Information Circle No. 121 on Inquiry Card—Page 17

2533

FACTS ABOUT 25



INDUSTRIAL BATTERIES

EXIDE POWERED TRUCKS FACTORY OPERATION

FROM THE RECEIVING OF SUPPLIES THROUGH STORAGE. PRODUCTION AND PACKING, TO THE SHIPMENT OF FINISHED PRODUCTS ... EXIDE-POWERED TRUCKS ASSURE FAST, SAFE, PRECISE HANDLING AT LOWEST COST FOR OPERATION, MAINTENANCE AND DEPRECIATION



LARGEST U.S. UNATTENDED HYDRO PLANT DEPENDS ON EXIDE-MANCHEX BATTERIES!

THIS 33,700 K.W. HYDROELECTRIC PLANT IN WISCONSIN NEEDS NO OPERATORS, BUT DOES RELY ON EXIDES TO FURNISH STAND-BY POWER FOR SWITCHES AND EMERGENCY NEEDS,

NOBODY'S EVER IN TH

WHEN LIGHTS GO OUT, EXIDE LIGHTGUARD UNITS GO ON, INSTANTLY, AUTOMATICALLY THEY PROVIDE ADEQUATE AND DEPENDABLE EMERGENCY LIGHTING PROTECTION IN RAILROAD STATIONS, FACTORIES, STORES, SCHOOLS, THEATRES, OFFICES, WHEREVER PEOPLE CONGREGATE, PROTECT YOUR PEOPLE AND PROPERTY AGAINST LIGHTING FAILURES. WRITE FOR DETAILS, DEMONSTRATION.

EXIDE INDUSTRIAL BATTERIES ARE BUILT FOR LONGER LIFE AND GREATER POWER. LET AN EXIDE SALES ENGINEER SHOW YOU HOW EXIDES CAN IMPROVE YOUR OPERATIONS, CUT COSTS, PROTECT YOUR BUSINESS.



EXIDE INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

For More Information Circle No. 122 on Inquiry Card-Page 17



For More Information Circle No. 123 on Inquiry Card—Page 17

F.O.B.



FILOSOFY OF BUYING

THE Journal of Commerce reports the growing trend—and the tremendous success-of travel incentives as top prizes in sales contests. It quotes Dick Todd, president of Todd Enterprises, a New York agency specializing in this sort of work, as estimating that at least 120,000 supersalesmen and dealers have taken luxury trips this year as a reward for topping their quotas, and that the number of concerns using travel incentives will double in 1955. An all-expense week for two in Bermuda is the most popular prize package offered, but that is by no means the limit. Westinghouse and Carrier Corporation dangle Paris before their panting representatives, and General Electric radio and TV dealers are even now competing for a 17-day Caribbean cruise. Nassau, Havana, Mexico City, Acapulco, and "Anywhere, U.S.A." are also on the list. If this trend continues, we shall have to revise the classic query, "Do your traveling salesmen sell, or merely travel?" We shall have to ask "Do your salesmen merely sell, or do they travel?"

UTBOARD speed champion is P. A. Bob Seeger of Morton Manufacturing Company, Chicago. Sailing a "B" stock hydroplane with a speed close to 60 mph., he has taken first place at Quincy, Sheboygan, McHenry, and Manteno racing meets. He is a member of the American Power Boat Association and the Outboard Club of Chicago.

THE CITY of Wilmington, Del., turns to the experts for advice on its municipal purchasing problems. Mayor A. F. Walz has appointed a special committee to study the feasibility of centralized purchasing for the city, naming H. B. Van Dyke, Division Purchasing Agent of Hercules Powder Company as chairman, working with A. C. Jones, Manager of the Basic Mate-

rials Division of DuPont's purchasing department, and W. P. Jackson, Assistant Purchasing Agent of the Delaware Power & Light Company. The study will cover three questions:

1. Can savings be achieved in the purchase of supplies used by the several city departments?

2. If the committee is satisfied that appreciable savings can be made, what plan should be developed that will fit the city's needs?

3. Can a plan be prepared which will provide an efficient and economical administrative organization, so that savings effected through central purchasing are not lost in the cost of operation?

Based on the committee's recommendations, legislation will be introduced at the January meeting of the General Assembly.

STEADY JOB: Oldest employee of Harris County, Texas, in point of service, is Purchasing Agent H. J. Lahrssen, with 47 years of public service to his credit. This unusual record was disclosed when the employees in his department recently baked a cake and had a gala office luncheon to celebrate his 69th birthday.

A RHUBARB of some proportions developed when the Barron Park (Cal.) Fire District Commissioners recently discovered that the Board's purchase orders were signed twice, on separate lines, by the same person. The criticism subsided somewhat when it was further disclosed that the Board itself had (1) written into its constitution a regulation that orders must be signed by the purchasing agent and by the secretary of the Board, and (2) subsequently appointed the same individual to both positions. The situation was further complicated by the fact that the constitution under which this procedure had been carried out for some five by t easy it is

vear

Bu write Sale "I port work count town How

tom

bev

will

by 1

the

friv

turkin mer he was sch twe que was ple

rul

bee

tion

T

to is tra

4

Cay

fr of co

PURCHASING

years had been declared invalid by the current Board. Red tape is easy to manufacture, but untangling it is a more difficult matter.

BUSINESS columnist Elmer Roessner quotes a purchasing agent writing on the topic "If I Were a Salesman":

"If I were a salesman, and an opportunity presented itself after work, I would be willing to buy a customer a drink or two at my country club or cocktail lounge. However, I would never give a customer a bottle or more of alcoholic beverage. You never know what he will do with the contents, whereas by buying a drink or two you have the opportunity of terminating such frivolity at any period."

THE Director of Purchases for Chicago's public schools was disturbed at the lack of competition in bidding on furniture requirements. Checking into the matter, he found that most of the furniture was specially designed by the school department of architecture twenty years ago to meet the requests of departments in which it was used, and the specifications, replete with special features that ruled out standard models, hadn't been changed since. The specifications engineer is currently meeting with the several departments in an effort to eliminate specialized details and open the way for more general bidding. About a dozen types of furniture are involved, including typewriter and art desks, chairs, storage cabinets, and various types of work benches.

TAX SPECIALISTS of the Treasury Department were recently called upon for a ruling. This may not be on your regular list of purchases, but it may be of interest to know that when a baseball club is purchased in toto, players' contracts cease to be deductible and become depreciable assets.

A LL'S QUIET on the textile front. In its fall report, the Textile Committee of N.A.P.A. observed:

"Several committee members are away on vacation and, to judge from the few reports received from others not on vacation, the entire committee could well stay away, business being what it is."

For More Information Circle No. 124 on Inquiry Card—Page 17→

NOW... Another Chrysler First!



If you've passed up using metal powder finished machine parts because your applications require units of greater strength and ductility than they normally provide, then you will want to investigate STEEL OILITE.

Here is a new, yet thoroughly proved, metal powder product that is saving users from 35% to as high as 96% over conventionally produced precision finished machine parts.

STEEL OILITE Finished Machine Parts provide revolutionary new strength and ductility that makes these big savings practical on countless new applications where component parts need to be especially tough.

Write today for the New Bulletin on STEEL OILITE just published. It's yours for the asking. Please request Bulletin STM-54.



CHRYSLER CORPORATION

AMPLEX DIVISION

Dept. B-12

Detroit 31, Mich.

FIELD ENGINEERS THROUGHOUT THE UNITED STATES AND CANADA

OILITE PRODUCTS INCLUDE: Bearings, Finished Machine Parts, Cored and Solid Bars, Permanent Filters and Special Units of Non-Ferrous and Ferrous Metals and Alloys including Stainless Steel.

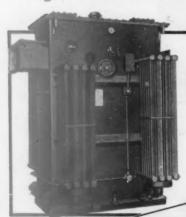


Now, Wagner Noflamol (non-inflammable liquid-filled) Load Center Transformers are available in a new, improved close-coupled design, as well as in the standard throat-con-

nected design. These transformers can be flush-mounted with any make of switchgear to form a neat, compact, streamlined unit substation for modern industrial service.

Wagner close-coupled transformers are available in ratings from 500 through 2000 kva. They are carefully designed to meet your distribution requirements.

Look to Wagner for better transformers that assure a continuous, dependable flow of power. Your nearby Wagner engineer will be glad to help you solve your load-center problems. Call the nearest of our 32 branch offices, or write us.



Wagner

Throat-Connected Unit Substation Transformers

for outdoor installation, or for applications where it is desirable to locate the transformer away from the switch-gear, Wagner can furnish these liquid-filled transformers in ratings to 2000 kva, 15 kv and below. Bulletin TU-13 gives full information.

Wadner Electric Corporation

WAGNER ELECTRIC CORPORATION
6360 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

ELECTRIC MOTORS
TRANSFORMERS
INDUSTRIAL BRAKES

AUTOMOTIVE BRAKE SYSTEMS— AIR AND HYDRAULIC

Made Leaktight by the

Ask almost any maintenance man this question: "What do you like most about Ohio Brass valves?" Nine times out of ten will come back the answer: "The Flexitite Disc.""

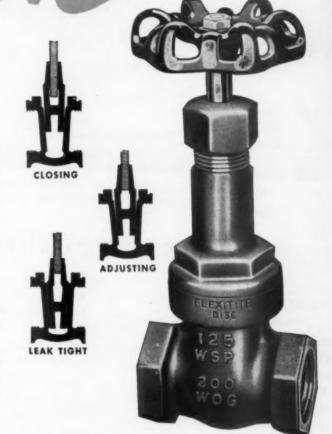
When a maintenance man installs a gate valve, he doesn't want to be called back to the same location in a week because it's leaking. And one sure way to avoid call backs is to use an O-B gate which features the Flexitite Disc.

This disc provides absolute tight shutoff on steam, water, air, gasoline, gas, oil and vacuum systems. Note that hard-to-hold gasoline is included.

The slotted disc has a slight flexibility which automatically compensates for small misalignment of seat faces...providing all-around tight contact between disc and seat surfaces every time the disc closes.

O-B bronze gate valves, featuring the Flexitite Disc, are available in sizes up to three inches, and for up to 200 pounds working steam pressure. Buy them from your Ohio Brass distributor.

Ohio Brass Company Mansfield, Ohio





Okio Brass Valves

BRONZE GLOBES, ANGLES, GATES AND CHECKS FOR INDUSTRIAL AND DOMESTIC SERVICES

4446-V

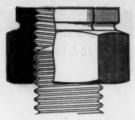


Many manufacturers use FLEXLOCS to fasten motors, compressors and other vibrating equipment to mounting plates. FLEXLOCs won't work loose... they eliminate costly service calls.

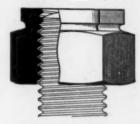
FLEXLOC locknuts reduce costly service calls

FLEXLOC locknuts do this because they stay put anywhere on a bolt as soon as their locking threads are fully engaged. Even the most severe vibration will not work them loose. FLEXLOCS offer many other advantages, too. They are one piece. They eliminate complicated, time-consuming methods of locking studs and bolts. They provide simpler, faster application and safer, more dependable locking than plain nuts and lockwashers, castellated nuts and cotter pins, nuts and jam nuts. They save buying, stocking and handling of extra parts. They are all metal. They have higher tensile strength than most other lock nuts. They permit you to stock only one nut for all temperatures to 550°F. They are reusable. They can be applied again and again without losing locking efficiency-a plus value in maintenance.

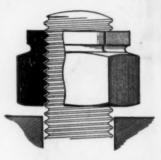
For information about Flexlocs and samples for test purposes, see your FLEXLOC distributor or write STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.



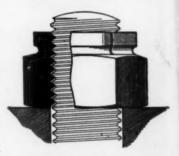
Starting. A FLEXLOC starts like any ordinary nut. Put it on with your fingers. Tighten it a standard hand or speed wrench.



Beginning to Lock. As the bolt enters the segmented locking section, the section is expanded, and the nut starts



Fully Locked As a Stop Nut. When 11/2 threads of a standard bolt are past the top of the nut, the FLEXLOC is fully locked. A FLEXLOC does not



Fully Locked As a Seated Nut. When it is used as a lock or stop nut, the locking threads of the FLEXLOC press inward against the bolt, lifting the nut upward and causing the remaining threads to bear against the lower surface of the bolt threads. Vibration will not loosen a FLEXLOC, yet there is no galling of threads.



LOCKNUT DIVISION

JENKINTOWN



Roebling drum packs are shipped on pallets unless otherwise specified. This gives you today's easiest, least expensive method of moving and stacking wire —with a fork truck, one man can do the work of ten.

Packed to save you money!

IN ADDITION to producing top quality high carbon wire, Roebling has developed many special methods of packing ... and some *one* of these, or some other method which may be developed for your specific requirements, may save a considerable amount of time and money in your plant.

Certain types of wire, for instance, can be packed in hexagonal fibre drum packs that provide superior protection and facilitate handling and storing wire. Drum packs do not have to be returned...save you bother, storage space and freight charges.

You pay for the best when you buy high carbon wire. Make sure you get the best, in wire and packing too. Always specify Roebling. John A. Roebling's Sons Corporation, Trenton 2, N. J.



Subsidiary of The Colorado Fuel and Iron Corporation

ATLANTA, 934 AVON AVE * BOSTON, SI SLEEPER ST & S PITTSBURGH ST * CHICAGO, 5525 W. ROOSEVELT RD * CINCINNATI, 3253 FREDONIA AVE * CLEVELAND, 13225 CAKEWOOD HEIGHTS BLVO. * DENVER, 4801 JACKSON ST * DETROIT, 915 FISHER BLDG * HOUSTON, 6216 NAVIGATION BLVO * LOS ANGELES, 5340 E. HARBOR ST * NEW YORK, 19 RECTOR ST * ODESSÁ, TEXAS, 1920 E. 2ND ST * PHILADELPHIA, 230 VINC ST * ROCHESTER, 1 FLINT ST * SAN FRANCISCO, 1740 17TH ST * SEATTLE, 900 1ST AVE S. * ST. LOUIS, 3001 DELMAR BLVD * TULSA, 321 N. CHEYENNE ST * EXPORT SALES OFFICE, TRENTON 2, N. J.



If you wish, Roebling spools will be delivered on pallets with separators, providing the easiest and most economical means of handling and stacking wire with fork trucks.

Real "PULL"

...3,000,000 Lbs. Worth

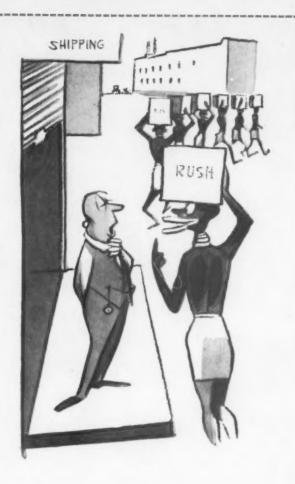


AND ORDNANCE

PRODUCES BETTER STEEL FORGINGS AND MACHINE WORK

IRVINE, WARREN COUNTY,

PENNSYLVANIA



Don't risk shipping goods "just any old way" if it's economy you crave . . .



You're thriftier to send 'em RAILWAY EXPRESS
—it's swift and it's sure, so you save!

The big difference is

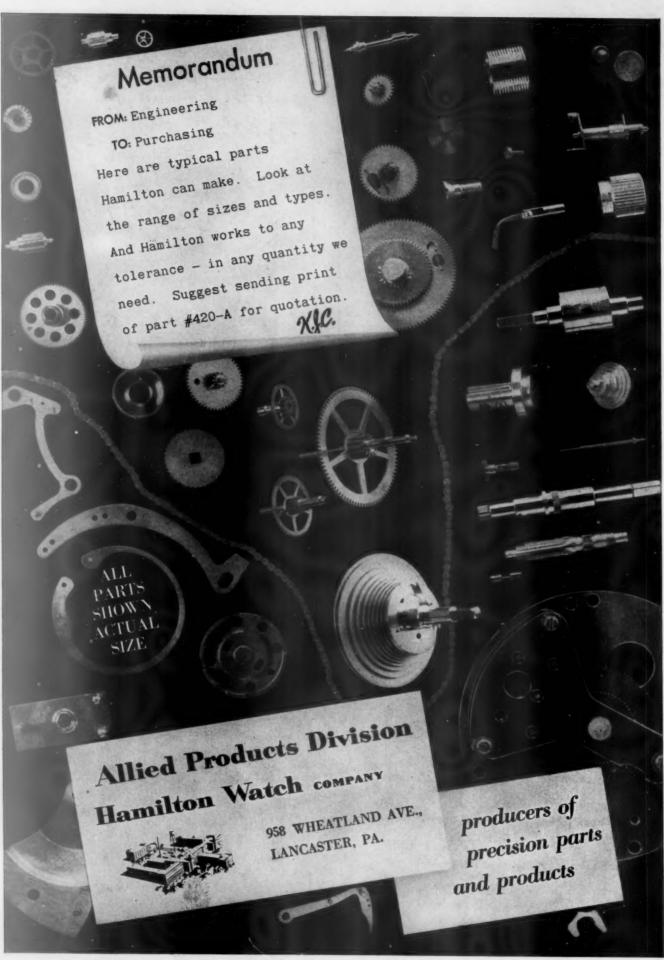
Whether you're sending or receiving...
whether your shipment is big or small...
whether it's by rail or air...for the
best answer to your shipping problem,
call Railway Express first. A complete
shipping service in the American tradition
of private enterprise.

As a contribution in the public interest, RAILWAY EXPRESS will take your orders for CARE.



... safe, swift, sure

For More Information Circle No. 130 on Inquiry Card-Page 17:



Where there's a SPECIAL Need

THERE'S



SPECIAL PURPOSE WIRING DEVICE

If you need it . . . it's included in ARROW-HART'S complete line of wiring devices, and it's the highest quality wiring device you can buy to meet that need.

If your plant requires . . . wiring devices that will stand up and take it under severe use . . . devices that can be at the mercy of the weather in out-of-door locations and still deliver continuous performance . . . devices that will

prevent tampering by unauthorized persons . . . devices that will protect personnel from injury and equipment from damage . . . devices that cannot disconnect accidentally . . . devices for any purpose . . . ARROW-HART HAS THEM ALL AND ALL ARE UNMATCHED FOR PERFORMANCE . . . DEPENDABILITY . . . QUALITY.

And to give you prompt delivery, Arrow-Hart serves you through leading Electrical Distributors of wiring devices.



7809

WEATHERPROOF DEVICES

For use in locations exposed to the

weather, or wherever moisture may get

at switches or receptacles . . . plating

rooms, boiler rooms, cafeterias, wash

rooms, etc. Receptacles include single

and duplex models with self-closing or

screw-on cover caps. Warning lights

and combinations are also available.







CORBIN ROTARY LOCK SWITCHES

Provide plant security, give positive protection to vital safety lights and other circuits. Prevent tampering by unauthorized persons. Incorporates genuine Corbin pin-type tumbler lock; can be actuated only by a special key.



HART-LOCK Interlocking DEVICES

Caps, connectors, plug bases, motor bases, motor plugs and flush receptacles, including "No-Trak" receptacles and connectors. Cannot disconnect accidentally. Prevent current interruptions that endanger personnel and waste time, money. Ideal for use with maintenance equipment, office machines, electric cranes, lifts, magnets, etc. Easily incorporated in new equipment or installed as replacements.



POLARIZED DEVICES 2, 3 and 4-WIRE

Spell s-a-f-e-t-y for plant personnel and equipment. They maintain polarity at all times. Made-to-order for portable electrical equipment, heating and lighting units, and wherever heavy-duty loads must be handled. Present rigid electrical codes that promote safety make these polarized wiring devices a plant necessity.

GROUNDING TYPE DEVICES 2 and 3-WIRE

Provide positive identification of grounded circuits. Exposed metal parts of plant electrical equipment are grounded to make safe operation certain. Fully meet requirements of the 1953 National Electrical Code. A-H offers the most complete line of grounding type wiring devices available anywhere.



5262

MAIL COUPON FOR FULL SPECIFICATION AND ORDERING INFORMATION Today!

ARROW

8147

ARROW-HART

Quality Wiring Devices

MOTOR CONTROLS

APPLIANCE SWITCHES • ENCLOSED SWITCHES

THE ARROW-HART & HEGEMAN ELECTRIC CO. HARTFORD 6 CONNECTICUT

WIRING DEVICE DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC CO. 103 HAWTHORN STREET, HARTFORD 6, CONNECTICUT

Please send me free literature on Weatherproof, Hart-Lock, Polarized and Grounding Type Devices . . . and Corbin Rotary Lock Switches...

NAME_

POSITION.

COMPANY_

CO. ADDRESS.

CITY___

ZONE

STATE

DISTRIBUTORS OF INCO PRODUCTS

Mill and Warehouse Service Centers for Inco Nickel Alloys (listed below) and Primary Nickel for alloying purposes.

NORTHEAST & MIDDLE ATLANTIC

Whitehead Metal Products Co., Inc.

Baltimore 5, Md.
Buffalo 7, N. Y.
Cambridge 39, Mass.
Harrison, N. J.
New Haven 13, Conn.
New York 14, N. Y.
Philadelphia 40, Pa.
Syracuse 4, N. Y.

EAST-NORTH-CENTRAL

Williams and Company

Cincinnati 29, Ohio Cleveland 14, Ohio Calumbus 8, Ohio Louisville 3, Ky. Pittsburgh 33, Pa. Toledo 2, Ohio

MIDDLE WEST, CENTRAL & NORTH

Steel Sales Corporation

Chicago 23, III.
Detroit 10, Mich.
Grand Rapids 2, Mich.
Indianapolis 18, Ind.
Kansas City 8, Mo.
Milwaukee 9, Wis.
Minneapolis 13, Minn.
St. Louis 10, Mo.

SOUTHEAST

J. M. Tull Metal & Supply Co. Atlanta 3, Georgia

SOUTH, SOUTHWEST & MOUNTAIN

Metal Goods Corporation

Dallas 9, Tex. Denver 2, Colo. Houston 3, Tex. New Orleans 12, La. Tulsa 3, Okia.

PACIFIC COAST & FAR WEST

Pacific Metals Company, Ltd.

Los Angeles 21, Cal. Salt Lake City 4, Utah San Diego 1, Cal. San Francisco 10, Cal.

NORTHWEST

Eagle Metals Company

Portland 12, Ore. Seattle 4, Wash. Spokane 24, Wash.

CANADA

Wilkinson Company, Ltd.
Edmonton, Alberta
Vancouver, B. C.

Robert W. Bartram, Ltd. Montreal 1, Que. Alloy Metal Sales, Ltd. Toronto 2, Ont.

MEXICO

La Paloma Co. De Metales, S. A. Mexico, Mexico, D. F

HAS YOUR PROBLEM ALREADY

BEEN SOLVED? Perhaps a man half-way across the country — or even next door — has solved a metal problem similar to the one that's facing you right now. That is why we think you will be interested in reading "Nickelsworth," a quarterly publication reporting new and unusual solutions to industrial metal problems made possible by nickel alloys. To start your complimentary subscription, just send your name and address to Inco.



Up to the ears?

Quiet, please! This sad-eyed gent from our Gallery of Troubled Executives has weighty problems to solve.

Lately, he's been going to pieces at the drop of a purchase requisition. Particularly any on the subject of corrosion-resisting metals and alloys.

Maybe it's time for someone to remind him of the extra services available through his Inco Distributor Salesman...

The Inco man knows where to go for answers to technical questions dealing with corrosion engineering and high temperature engineering. He can furnish helpful literature and working instructions . . . and practical advice on welding, machining, heat treating and other fabricating methods . . .

His Inco Distributor salesman represents a source of supply for sand, centrifugal and precision castings . . . and for hundreds of fabricated parts, such as fittings, fastenings and accessories.

He knows what special sizes and shapes are in warehouse stocks. He can frequently suggest alternate sizes or materials, so production can be kept moving. He's right there to arrange for outside cutting, shearing or sawing jobs when in-plant facilities are inadequate or overloaded. He is set up to handle mill orders quickly and smoothly and to get delivery information promptly.

Yes, our busy friend must have forgotten that the Inco Distributor salesman is equipped to serve him in more ways than one. But we hope you won't forget to call on your Inco Distributor salesman — often — for the extra services he stands ready to provide whenever you need them.

THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street

New York 5, N. Y.

Inco Nickel Alloys



Monel® • "R"® Monel • "K"® Monel • "KR"® Monel • "S"® Monel Inconel® • Inconel "X"® • Inconel "W"® • Incoloy® Nimonic® Alloys • Nickel • Low Carbon Nickel • Duranickel®



The Hyatt A-TS Bearing is one of five basic Hy-Load types featuring a separable inner race.

Like all Hy-Loads, the A-TS is built with cylindrical rollers, so that it offers highest capacity for radial loads, plus the long, troublefree service assured by Hyatt's precision manufacture. But beyond that, this particular Hy-Load type offers the design advantages of interchangeable separable components.

With inner races removed, bearings of this type may be applied with rollers operating directly upon the surface of a suitably hardened shaft. This permits the use of largerdiameter shafts or smaller-size bearings, resulting in greater shaft rigidity or a saving in the cost of the bearing.

If you aren't already profiting through the use of Hyatt Hy-Load Bearings, contact a Hyatt sales-engineer or write today for our Catalog No. 150.



ROLLER BEARINGS

HYATT BEARINGS DIVISION . GENERAL MOTORS CORPORATION . HARRISON, NEW JERSEY

For More Information Circle No. 134 on Inquiry Card-Page 17

STAINLESS fastent STOCK in STOCK

ALLMETAL, one of the major suppliers of stainless steel fasteners to the metal working industries, is now in the top position to fill all your stainless steel fastener requirements.

New Garden City plant now operating at top speed and quality

- Complete range of screws, bolts, nuts, rivets and washers
- Over 9000 items in stock means immediate delivery from one source
- Unsurpassed facilities for quantity fabrication of specials
- A staff of seasoned engineers always available for consultation
- Pioneers in the manufacture of stainless steel fasteners

WRITE NOW FOR FREE COPY OF FASTENER MANUAL P19

SCREW PRODUCTS COMPANY, INC.

GARDEN CITY

NEW YORK



"You see Powell Valves everywhere. Naturally, since ...

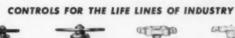
. . . engineers specify Powell Valves because they're dependable and economical. Engineers also know Powell has a complete line of valves."

FAMOUS for dependable flow control

Powell Valves have a record of dependable flow control since 1846. And Powell can supply just the valve you need-for Powell probably makes more kinds of valves and has solved more valve problems than any other organization in the world.

Available through distributors in principal cities. Made 1/8" to 30" and for 125 pounds to 2500 pounds W.S.P. Bronze, iron, steel and corrosion resistant metals and alloys. On problems, write direct to The Wm. Powell Company, Cincinnati 22, Ohio.











Powell Valves 1081



The reason? SPANG CW Steel Pipe is uniform in every respect . . . a result of quality-controlled manufacturing.

-SPANG CW has strong, uniform welds

During the forming and welding of SPANG Pipe, automatic heat control eliminates temperature deviations. This produces highest quality welds

and assures uniform pipe strength through the entire length of the pipe.

-SPANG CW has uniform diameter

Finished pipe is carefully sized and straightened to assure uniformity. Careful testing and inspection eliminates any CW Pipe that does not come up to SPANG's high standard.

The result? SPANG CW Steel Pipe

is easy to work with . . . easy to cut, bend, thread and weld. It saves you time on the job . . . gives you faster installations ... saves you money, too!

SPANG CW Steel Pipe is tops for plumbing, heating, air conditioning, radiant heating and snow-melting systems. Call your nearest SPANG Distributor for complete information on SPANG CW Steel Pipe. Try it on your next job!



SPANG-CHALFANT

DIVISION OF THE NATIONAL SUPPLY COMPANY

General Sales Office: Pittsburgh 30, Pa. District Sales Offices: Atlanta, Boston, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis







Make light work of all your drilling jobs

Get top drilling performance with these Black & Decker Drills. Each of them is compact, easy to handle, light for its degree of power, reduces worker fatigue. Each is actually extra powered because it's driven by a B&D-built motor specially designed for it. Choose from among 31 models...for production, construction, maintenance . . . and to do the job accurately, effectively, fast. See your Black & Decker distributor for demonstrations. For additional information write to: THE BLACK & DECKER MANUFACTURING Co.,

Dept. 1712, Towson 4, Maryland.



NEMA-rated at 200 amps. -but pulls 300 amps.! Runs all day on one tank of gas!

New P&H WN-250

Both engine and generator are mounted on a sturdy frame. Two-wheel mounting also available.

Engine-Driven Arc Welder

Here you get everything you've ever wanted in an engine-driven welder - including cost-cutting features you don't get from any

(1) The P&H WN-250 has more capacity than other welders with the same rating.

(2) It has a full 20-gallon gas

(3) It is powered by a direct-connected 180GLU Waukesha gasoline engine, water-cooled and built for heavy duty. Not an automotive light-weight. Available with electric starter.

(4) P&H idling device establishes the rated speed of 1800 rpm as soon as the arc is struck. This speed is maintained for a set period after the arc is broken.

(5) P&H Dial-lectric Control provides stepless heat adjustment over the entire high or low range.

(6) It has pre-lubricated bearings, to reduce the need for servicing and insure longer life.

(7) Auxiliary AC power supply (1KVA) permits floodlighting and running power tools.

You're money ahead with a P&H WN-250. Ask your P&H representative or distributor for all the facts. Or, write for bulletin.

PAH WELDING DIVISION HARNISCHFEGER CORPORATION

Continuous 8-hour welding test demonstrates the extra stamina of the P & H WN-250

You can't beat welding performance like this: In a recent test, the P&H WN-250 operated continuously for 8 hours on a 70% duty cycle.

A 5/32" electrode was used with 300 feet of cable. There were 250 amps. at the electrode. So that test would be continuous, three welding operators were used. When one got tired, another took over. All used the drag technique with a 6010 rod-which is as close to a short circuit as you can get.

At the end of 8 hours, the P&H generator was still cool. And the WN-250 was still rarin' to go—the weldors were worn out, but not the machine.







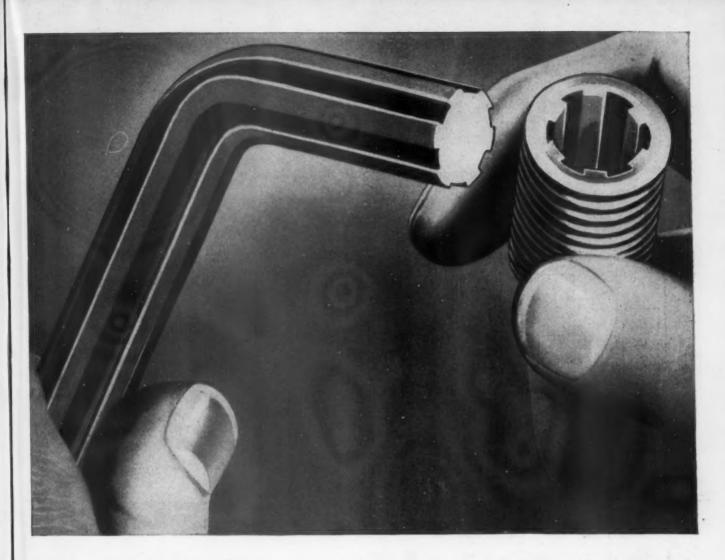












Multiple-Spline Set Screws <u>hold</u> tighter – because you can <u>wrench</u> them tighter!

The extra holding power of Bristol's exclusive multiple-spline set screws enables these flush-fitting fasteners to be used in the newest, most compact design applications.

They withstand severe shock and vibration, permitting fewer and smaller screws to be used without sacrificing strength.

While the splining principle has long been recognized as the best means of transmitting rotary

power, the materials of which they are made also contribute to the tremendous holding strength of these Bristol set screws. Standard screws are made of heat-treated alloy steel; bronze, brass, monel or other metals are available on special order.

Bristol multiple-spline set or cap screws are carefully designed to close tolerance (ASA approved) in sizes from 0 wire to ½" in diameter. Get them through your regular industrial distributor.

BRISTOL'S SOCKET SCREWS

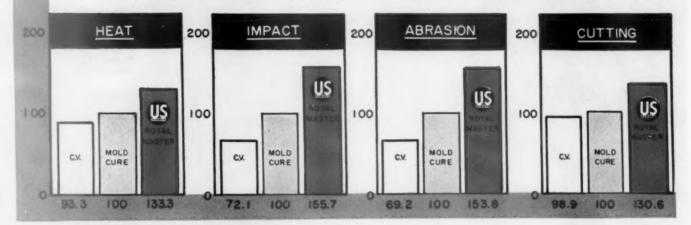


THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

For More Information Circle No. 140 on Inquiry Card-Page 17

STARTLING

Comparative performance of portable cords related to major life factors.



New U.S. ROYAL MASTER portable cord PROVES SUPERIOR TO ALL OTHERS IN EVERY SERVICE FACTOR!

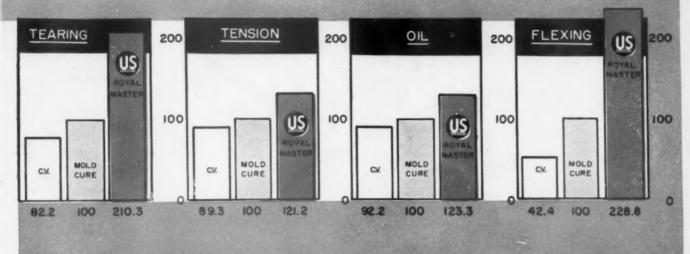
Newly developed U. S. Royal Master Cord gives almost twice the service of other molded cords—gives \$1.88 value for every cord \$1.00!

Life factor charts illustrate outstanding superiority of new U. S. Royal Master over the average of both the molded cords and the short-lived continuous vulcanized cords of other makes.



UNITED STATES

EVIDENCE!



LOOK FOR THE NAME - U. S. ROYAL MASTER



Approved by Underwriters' Laboratories, Inc.

Cord construction completely reexamined. Over two years ago, U. S. Rubber engineers began a thorough reexamination of electrical cord design and construction. More than a thousand cords, including those of all major competitors as well as our own U. S. Royal Cord, were thoroughly and painstakingly analyzed. Over 10,000 tests were made to determine the principal causes of cord failure.

Every possible life factor was carefully and honestly appraised to find its relation to overall cord service.

With the findings at hand, "U. S." Engineers then drew upon their 64 years of experience in the manu-

facture of fine quality wire and cable to produce this exceptional new cord.

Every fault uncovered by the exhaustive two-year testing was tackled and solved.

Tested and proved. The new U. S. Royal Master was then tested against all competitive cords—installed in outside plants for final on-the-job corroboration.

U. S. Royal Master Cord proved itself to be unquestionably the finest cord you can buy! So superior, it gives almost double the service life of the average of competitive molded cords—actually gives you \$1.88 in value for every cord dollar!

Prove for yourself the outstanding superiority of new U. S. Royal Master Portable Cord—in both service life and economy! Get in touch with your "U. S." distributor today!

RUBBER COMPANY



provides strip Quality in SHEET Sizes

Remarkable uniformity of gauge in MicroRold Stainless Sheets up to 36" wide.

The "Thinness Control" used in the manufacture of light gauge MicroRold Stainless Sheets assures you of the *same* dimensional accuracy as in strip stainless. Specified gauge thicknesses may be rolled in sheet sizes with tolerances as low as 3% average (plus or minus) as compared to the A.I.S.I. allowable of plus or minus 10%. This results not only in weight savings but also in fabricating economies.

With "Thinness Control" MicroRold's close adherence to a specified gauge will naturally result in a longer die life. Not only is MicroRold held closely to the specified thickness, but the "crown", or extra thickness in the center, is less in MicroRold than the "crown" in sheets rolled by conventional practice.

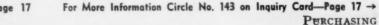
Regular use of MicroRold Sheet can give you more stainless area per ton or the equivalent area with lesser weight.

MicroRold Stainless Steel Sheets are available up to 36" wide and in gauges from .005 in commercial grades, finishes and temper.

Ask your steel warehouse distributor for MicroRold with "Thinness Control"

Washington Steel Corporation

Washington, Pennsylvania



MEMORANDUM

TO: JAMES MacKENZIE, PURCHASING

FROM: EDWARD MILLER, SAFETY

SUBJECT: PENOPTIC HEAD AND EYE PROTECTIVE EQUIPMENT

JIM: Have checked descriptive data and prices you secured and tested the following "PENOPTIC" safety products:

SAFETY GOGGLES

WELDING GOGGLES

SAFETY LENSES

WELDING LENSES

FACE SHIELDS

WELDING HELMETS

COVER GOGGLES

WELDING COVER GLASS

The lab is preparing detailed reports on each item. Thought you would like to know immediately that all items meet or exceed our quality standards for these products. Incidentally, line also has advanced style and comfort features.

Our tests prove Pennsylvania Optical has obviously maintained quality in attaining the lower price structure. Am convinced they can offer such substantial savings only because of their manufacturer-to-user distribution set-up.

Another advantage of direct distribution is dealing with the people directly responsible for product performance. Should also speed up service considerably.

representative called on you. Please fill me in on whatever I missed and should know.

PENNSYLVANIA OPTICAL COMPANY

READING, PENNSYLVANIA

Known For Fine Ophthalmic Products Since 1886 For prices and full information on all Penoptic products, write directly to Reading, Pa. or 1712 Taraval St., San Francisco 16, Cal.

any way look at it.



portable
grinding
is profitable
grinding
with
SIMONDS
resinoid bonded
grinding wheels

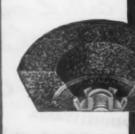
Spat which I sweething works! Grinding to come which ing with add shapes! When ever to wear, to people with a shapes, give one service, and include everything you a saddle which where, and when the shapes when the shapes with the same wheels when the same with the same when the same with the sam

SIMONDS ABRASIVE CO.

PHILADELPHIA 37, PA.



Rotor type cup wheel—cross section shows steel bushing flange and safety ring.





BRANCH WAREHOUSES: BOSTON, DETROIT, CHICAGO, PORTLAND, SAN FRANCISCO . DISTRIBUTORS IN PRINCIPAL CITIE

DIVISION OF SIMONOS SAW AND STEEL CO., FITCHBURG, WASS. . OTHER SIMONDS COMPANIES: SIMONDS STEEL MILLS, LOCKPORT, N. Y.



__...get it from__ National Lead Company

If your metal joining, sealing or filling operations call for solder and flux, you're sure to find what you need in National Lead's "open end" line.

You can pick from a list of stock items that would fill this page . . . but that's not all. With unsurpassed research, testing and production facilities, we are set up to solve practically any problem that involves fluxing and soldering.

Supplying every form of solder from pigs to powder is standard practice.

Furnishing every practical formula of solder from one end of the tin-lead scale to the other, and with other metal additives where needed, is routine.

Compounding fluxes for every conceivable pre-

soldering purpose is all in the day's work.

Put your metal joining, sealing and filling problems up to "National." Our chemical and metallurgical engineers are at your service. Get in touch with nearest office.

NATIONAL LEAD COMPANY

General Offices: 111 Broadway, New York 6, New York Atlanta • Baltimore • Buffalo • Chicago • Cincinnati Cleveland • Dallas • Detroit • Kansas City Milwaukee • New Orleans • Omaha • Phila-

delphia • Pittsburgh • St. Louis • St. Paul Boston: National Lead Co. of Mass.; Pacific Coast: Morris P. Kirk & Son, Inc., Los Angeles, Emeryville (Calif.), Phoenix, Portland, Salt Lake City, Seattle; Canada: Canada Metal Co., Ltd., Montreal, Toronto, Vancouver, Winnipeg.



For More Information Circle No. 145 on Inquiry Card-Page 17

←For More Information Circle No. 144 on Inquiry Card—Page 17 DECEMBER, 1954

51



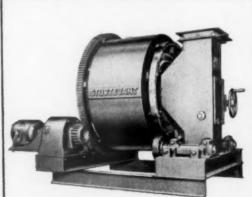
The Sturtevant Micronizers are fluid jet grinding machines designed to reduce solid materials to particle sizes in the micron range.

Using compressible fluids, air or steam, as the source of energy, Micronizers produce pulverized materials to specifications unobtainable by other mechanical equipment such as ball, pebble or hammer mills.

The variety of materials processed is large and includes both nonmetallic and metallic minerals and ores, metals, pigments, insecticides, fungicides, pharmaceuticals, plastics, dyes and numerous other organic and inorganic products.

It is quickly and easily cleaned on changes of formulation with minimum loss of material. Simple to install and operate. It is available as a machine alone . . . or as a complete grouping with premixing, grinding and bagging equipment. Write for complete information, today.

*Micronizer is the Registered Trademark of the Sturtevant Mill Company.



Sturtevant Dry-Batch Mixer for mixing materials into a homogeneous mass. 5 models: 1/4 to 2 tons.

STURTEVANT MILL COMPANY

107 CLAYTON STREET, BOSTON 22, MASS.

Designers and Manufacturers of CRUSHERS . SEPARATORS . CONVEYORS MECHANICAL DENS and EXCAVATORS . ELEVATORS . MIXERS

For More Information Circle No. 146 on Inquiry Card-Page 17

For More Information Circle No. 147 on Inquiry Card-Page. 17->

INSTALL WIREWAYS FASTER!

SQUARE D'S NEW AND EXCLUSIVE

Lay-in Duct

FASTER ASSEMBLY!

LESS NUTS



FASTER WIRING!

NO MORE THREADING OR PULLING OF CONDUCTORS...JUST LAY THEM IN



FASTER HANGING!

UNIVERSAL TYPE HANGERS



FASTER GANGING!

KNOCKOUTS
MATCH THOSE
ON RELATED
SQUARE D
EQUIPMENT.
NO CONDUIT
BENDING



Square D's exclusive design provides hinged covers for both the <u>duct sections</u> and <u>connectors</u>.

Easily removable fitting covers then provide a completely unobstructed wireway in which to lay wires.

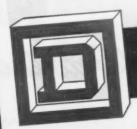
lay wires.

LAY-IN DUCT is available in $2\frac{1}{2}$ " x $2\frac{1}{2}$ ", 4" x 4", and 6" x 6" sizes, in standard lengths

Square D's exclusive design provides hinged of 1, 2, and 5 feet. There is a complete line of fittings, all with the "lay-in" design feature.

Write for the complete story of LAY-IN DUCT—how it gives you a better wireway system, easier, faster and at less cost. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS



SQUARE D COMPANY



Sometimes the easy way is the best

"In buying bolts, as in doing anything else, the simpler you can make it the more time you save. That's why we take the easy way of buying all our bolts from Bethlehem. Bethlehem bolts come in a complete range of types and sizes, and they have the dependable quality that our people like."

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



Bethlehem supplies every type of Fastener

For More Information Circle No. 148 on Inquiry Card-Page 17

Ansul

is the only dry chemical fire extinguisher backed by a five year warranty!

Here is proof of Ansul's superiority . . . a five year equipment warranty, the only one of its kind in the fire control industry.

For the buyer of fire equipment this important warranty means many extra years of trouble-free protection plus freedom from costly and frequent maintenance checks and repairs.

The special design and construction features that make this warranty possible provide not only dependable protection but also *fast*, effective fire control. Ansul's weather-tight construction keeps out moisture and resists corrosion. Patented nozzles deliver the right kind of stream for your fire protection problem. The sealed pressure cartridge puts Ansul's "Plus Fifty" dry chemical to work immediately—no delay or lag. And finally rugged construction makes it possible for Ansul equipment to give peak performance under the toughest operating conditions.

HERE IS THE BIG TRAINING AND SERVICE PLUS OFFERED ONLY BY ANSUL!

Available without cost to all Ansul users.



Training for your personnel at your plant by Ansul specialists.



Customer training school at Marinette for your key safety personnel.



Visual aids on fire control for your safety meetings and other training.



In-plant survey to scientifically determine your fire protection needs.

Call the Ansul Man!



ANSUL

Get in touch with your local Ansul man through the "yellow pages" or write ANSUL CHEMICAL COMPANY, Fire Equipment Div., Dept. F-83, Marinette, Wisconsin.





in the classroom!



in the tool room!

If a \$2.00 tool must be replaced every six months, tool costs on that job total \$4.00 a year. If, on the other hand, a \$3.00 tool will give a full year of service, you'll get \$4.00 worth of tool service—and save \$1.00 a year on tool costs as well.

In the very simplest terms, that's the reason why Apex tools are preferred for production nut running operations. Designed specifically for continuous, heavy-duty use. Apex tools cost a little more in the beginning, a lot less in the end.

Apex tools are precision-built of high carbon electric furnace alloy steel, cold broached and heat treated to withstand the severe shocks of impact service. That's the reason your tool costs will be lower when you ask for Apex nut running tools. Choose from more than 5,000 stock types and sizes of impact sockets, extensions, adapters, universal wrenches. If your requirements are special, send sketch or blueprint—we'll do our best to help you.

CATALOG 29—Specifications, drawings, illustrations of the complete Apex line of nut running tools. Write, on your company letterhead please, for your copy.

APEX

impact sockets, extensions, adapters

THE APEX MACHINE & TOOL COMPANY
1034 S. Patterson Blvd., Dayton 2, Ohio

POWER BITS, INSERT BITS AND BIT HOLDERS, FOR PHILLIPS, FREARSON (Reed & Prince), SLOTTED, CLUTCH HEAD and SOCKET HEAD SCREWS • HAND DRIVERS FOR PHILLIPS, FREARSON AND CLUTCH HEAD SCREWS • TWO-PIECE DRIVERS FOR HEX HEAD SCREWS • SOCKETS, EXTENSIONS, ADAPTERS AND NUT SETTERS • UNIVERSAL SOCKETS, EXTENSION WRENCHES AND ADAPTERS • AIRCRAFT AND INDUSTRIAL UNIVERSAL JOINTS • SELF-RELEASING AND ADJUSTABLE STUD SETTERS • SAFETY FRICTION TAPPING CHUCKS • VERTICAL FLOAT TAPPING CHUCKS.



New G BOND sets new records in tool room grinding

Here's Proof... Users praise the many "TOUCH of GOLD" advantages in Norton pace-setting wheels

Norton G Bond wheels have sure started something! In tool and cutter grinding, as in many other forms of precision and semi-precision grinding, they're giving users an entirely new slant on how efficient, long-lasting and profitable wheels can be.

What Users Say About New G Bond Wheels

"Good finish, longer wheel life."

"Heavier feeds without burn."

"Run absolutely true."

"No breakdown—no jagged edges."

"Cut freely, hold shape with no burning."

"They show how a real wheel will cut."

G Bond Alundum* Wheels In Your Own Tool Room

will take heavier cuts in expensive, heat-

sensitive steels without drawing temper. They'll reduce tool spoilage, give you closer tolerances and smoother finishes than you ever got before — with fewer wheel changes and machine adjustments... Those are the value-adding, moneysaving "Touch of Gold" advantages that make G Bond wheels outperform any others you ever used.

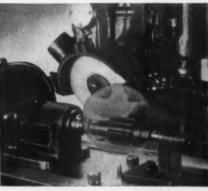
Your Norton Distributor

can recommend the right G Bond wheels for your jobs. Contact him or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities, listed under "Grinding Wheels" in your classified phone directory. Export: Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.



Making better products ... to make other products better

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries



"Better cut and less burn than previous Norton or other make wheels. We're re-ordering 250 G Bond wheels," was the comment from this Ohio tool company.



"We're using heavier feeds with G Bond wheels and getting faster sharpening."

For More Information Circle No. 151 on Inquiry Card-Page 17

DECEMBER, 1954

MAXIMUM WORKING PRESSURE 10,000 PSI for water, oil or gas Body and stem guide extra heavy bar stock fused into one piece. Valve stem 416 stainless steel. Packing special one-piece "Mar-Bodies marked in accordance with MSS regulations. ONE PIECE The stem guides of conventional needle valves are screwed into bodies-this of-

IntroducingThe Ultimate in Needle Valves

Here is one of the crowning achievements of Marsh research, design, and manufacturing skill. It is the first needle throttling and shutoff valve to combine all of the qualities called for today in this highly critical and ever broadening field.

It is a valve that has strength and safety to spare . . . rated for pressures up to 10,000 psi—equally efficient in the lower ranges. A product of Marsh instrument-making and valve manufacturing experience, it combines instrument-like precision with the ruggedness that distinguishes all Marsh valve specialties.

The illustrations tell the story of new thinking; new standards. Body and stem-guide are machined from extra-heavy carbon steel bar stock. Still greater strength and rigidity are achieved by fusing the stem-guide into the body. The complete fusion of guide and body is accomplished by the exclusive Marsh "Conoweld" process.

Marsh "Conoweld" process.

There are two big advantages to this one-piece construction: (1) It eliminates the danger of unscrewing the valve from the body when opening—a frequent cause of leakage, even dangerous blowouts (2) It permits perfect line-up of threads and seat. As a result, Marsh valves are easier to operate even at high pressures.

The precision-machined stem is 416 stainless steel. Stem threads are fine pitch for extra strength and fine, controlled regulation. Notable advancements are special "Marpak" one-piece, non-binding longer-lasting packing; deep thread chambers, keeping inlet and outlet piping away from ports and contributing excellent flow characteristics. Entire packing nut and packing gland are electro-zinc plated, preventing corrosion and giving the valve a handsome, plated exterior. The rugged malleable handle is finished in heavy baked enamel.

The new needle valve line includes globe and angle patterns with double female connections in sizes ½", ½", ½", ½", ½", ¾" and 1". Also globe and angle valves with male inlet and female outlet in sizes ½" and ½". Complete stock carried at our Skokie, Illinois factory and also at our branch plant in Houston, Texas,

Write today for catalog giving complete details.

MARSH INSTRUMENT CO. Sales affiliate of Jas. P. Marsh Corporation Dept. G Skokle, III.

Houston Branch Plant: 1121 Rothwell St., Sect. 15, Houston, Texas

MARSH



ten causes leakage or

blow-outs. Marsh Needle Valves are fused into one-piece by exclusive "Conoweld" process.



BATH

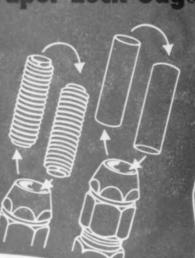
REVERSIBLE THREAD

AND

CYLINDRICAL GAGES

give at least twice the wear of Taper Lock Gages

Either end of the "Go" and "Not Go" members may be used for gaging.



RED "NOT GO" LOCKING NUTS

GREEN "GO" LOCKING NUTS

FEATURES

- 2 Gages for the price of 1
- Adjustable for use as a depth gage
- Color identification for "Go" and "Not Go"

Cut gaging costs in half by doubling the hours of precision gaging with BATH Reversible Gages. They're made to the same uniformity and high quality standards as Bath Regular Thread Gages and Bath Ground Thread Taps.

Special gages to your specifications

JOHN BATH & CO., Inc.

30 Grafton St., Worcester 8, Mass.

RING THREAD GAGES • PLUG THREAD GAGES
INTERNAL MICROMETERS • GROUND THREAD TAPS

Clip and mail coupon today!

John Bath & Co., Inc.

30 Grafton Street Worcester 8, Mass.

Please send folder . . . I'd like to know more about Bath Reversible Gages.

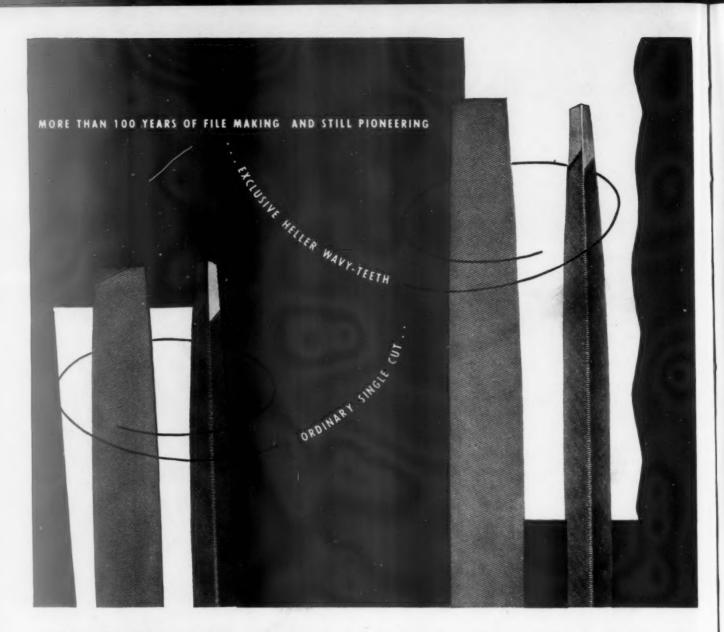
NAME_

TITLE

COMPANY_

ADDRESS

For More Information Circle No. 153 on Inquiry Card-Page 17



HELLER WAS FIRST WITH WAVY-TEETH MILL AND SAW FILES

You can remove more metal faster when you use Wavy-Teeth mill or saw files instead of ordinary single cut mill or saw files. Always specify "Wavy-Teeth" to get this exclusive Heller tooth arrangement . . . a typical development of Heller research. Through a continuous program of inspecting, testing and improving, Heller guarantees file users "the best."

other Heller Firsts

SPIRAL-CUT Half Round Files **NUCUT Wavy-Teeth Files VIXEN Milled Curved Tooth Files**

Registered T.M.

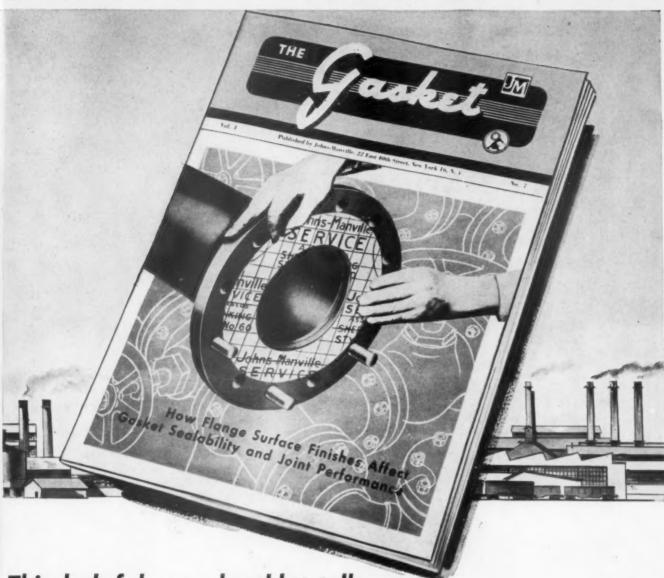


THESE 3 FAMOUS BRANDS ARE MADE ONLY BY

HELLER BROTHERS CO. America's Oldest File Manufacturer NEWCOMERSTOWN, OHIO



HELLER DISTRIBUTOR CAN SUPPLY ALL YOUR NEEDS



This helpful new booklet tells you

How flange surfaces affect gasket performance

IF YOU BUY, specify or design joints requiring gaskets, you will find helpful information in this new booklet. It provides a basis for selecting the flange surface finish most suitable for a given gasket. It explains why the right finish makes it easy to form the initial seal and obtain the best joint performance in service.

This booklet is the latest in a series of technical publications issued by Johns-Manville under the collective title "The Gasket." It is based on studies made at the Johns-Manville Research Center, largest laboratory of its kind in the world. It incorporates the long experience of Johns-Manville engineers in the design of gaskets such as asbestos, fibre and composition types, asbestos-metallic and all-metal gaskets.

Booklet offered without charge

To secure your copy of this study, write for "The Gasket," PK-48A No. 7. Address Johns-Manville, Box 60, N. Y. 16; in Canada, 199 Bay St., Toronto 1, Ont.



Johns-Manville PACKINGS & GASKETS

For More Information Circle No. 155 on Inquiry Card-Page 17

"We cut our shipping costs three ways,"

> says S. S. Auchincloss, President of De Walt, Inc.

"We wanted to improve the packaging of our industrial woodworking machines," continues Pres. Auchincloss. "So, we put the problem up to Atlas Plywood.

"We got that improvement — three ways — through Atlas Plywood lab-tested containers. The far greater protection these cases give our products is worth money to us in reduced damage claims. And they not only cut our assembly time by 20%, but they cost less than our old containers — making them more economical to use as well as to buy."



"Complete saw shops" is a fitting description of De Walt power saws, pace-setters wherever wood is cut. Packaging them calls for special care, to protect the mechanism from normal jolting and jarring during transit from the De Walt factory, Lancaster, Pa., to users far and near. Atlas Plywood cases supply that vital protection — and cut De Walt's shipping costs in the bargain!



Atlas Plywood Cases like this meet De Walt's needs for better, lower cost shipping. Eliminating paper shrouds, they're more secure against dirt, dust and water than the old containers. Their over-all strength, including stacking strength, is greater, too. Workers like them because they're easier to handle. And management likes them because they cut costly assembly time.

What about you? Do you risk wasted dollars due to product damage or increased shipping costs from unreliable containers? Send for free informative, illustrated 24-page booklet, "How Atlas Plywood Cuts Your Shipping Costs... Safely," — or see your Atlas Plywood representative (Classified Telephone Directory). Learn about the remarkable testing laboratory where Atlas Plywood containers win their lab-tested label. Atlas Plywood Corporation, Dept. P-4, 1432 Statler Building, Boston 16, Mass

Atlas Plywood

CORPORATION

FROM AMERICAN FOREST TO FINISHED PRODUCT

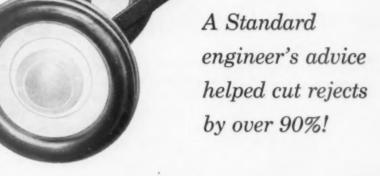


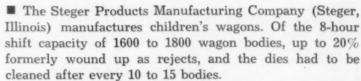
This little

red wagon presented

a big drawing problem!

Steger





Six years ago a Standard Cutting Oil Engineer suggested Stanicool HD. Today it's still on the job—the reject rate reduced to less than 10 a day. Die breakage is down to almost nothing; dies are cleaned only once or twice daily. Again, Standard Oil's metalworking products prove they can do the hard jobs better!

STANICOOL HD Soluble Oil—for cutting and grinding operations and for certain forming operations. Mixes readily, non-irritating, anti-rust. Call on the services of your Standard Oil Cutting Oil Engineer. Write Standard Oil Company (Indiana), 910 S. Michigan Avenue, Chicago 80, Illinois, to secure the services of the Standard Cutting Oil Engineer nearest you.



ı risk

oduct

pping con-

orma-

Cuts

Atlas Clas-

tory).

Atlas

their

wood

7 → SING

At Steger, die cleaning is of major importance because a single scratch can result in torn or ruined bodies during the processing. Stanicool HD safely reduces the time-consuming die cleaning operation to an effective minimum.



STANDARD OIL COMPANY

(Indiana)

A complete line of metalworking products including: STANICUT Cutting Oils—STANOSTAMP Compounds—SUPERLA Quenching Oil.



R-P&C VALVES

Bronze, Electric
Iron & Cast Steel
Valves and Steel Fittings
R-PAC VALVE DIVISION

TRU-LAY
Preformed
WIRE ROPE

ACCO Registered
Wire Rope Slings,
Crescent Non-Preformed
Wire Rope
AMERICAN CABLE DIVISION

PAGE CHAIN LINK FENCE



Welding Wire, Shaped Wire, Manufacturers' Wire PAGE STEEL & WIRE DIVISION





AMERICAN CHAIN

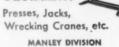
Weed Tire Chains, Welded and Weldless Chain, ACCO Registered Sling Chains AMERICAN CHAIN DIVISION

LAY-SET Preformed WIRE ROPE



Non-Preformed Wire Rope HAZARD WIRE ROPE DIVISION





These and Other Acco Products Offer Better Values

• Acco products are designed and manufactured to be "intentionally better." They are used directly, or as component parts in a wide variety of products and machines. They help do many jobs better. 16 Divisions of the American Chain & Cable Company manufacture more than 100 essential products.





Aircraft Cable, Push-Pull Controls, Tru-Stop Brakes for Trucks and Buses AUTOMOTIVE AND AIRCRAFT DIVISION



HELICOID PRESSURE GAGES

HELICOID GAGE DIVISION

FORD HOISTS



Hand and Electric Hoists

FORD CHAIN BLOCK DIVISION



PENNSYLVANIA LAWN MOWERS

Power and Hand Mowers
PENNSYLVANIA
LAWN MOWER DIVISION



CAMPBELL MACHINES

Wet Abrasive Cutting Machines, Nibbling Machines

CAMPBELL MACHINE DIVISION

"ROCKWELL" and TUKON HARDNESS TESTERS

> WILSON MECHANICAL INSTRUMENT DIVISION

WRIGHT HOISTS and CRANES



WRIGHT HOIST DIVISION



CASTINGS

Reading Electric Steel
ACCO Malleable
ACCO CASTING DIVISION





MARYLAND BOLTS and NUTS

THE MARYLAND BOLT and NUT COMPANY



OWEN SPRINGS

Springs and Units for Mattresses and Furniture OWEN SILENT SPRING DIVISION Serving
Industry
Transportation
Agriculture
and the
Home



For More Information Circle No. 158 on Inquiry Card-Page 17

Management Means Coordination

F OR many years, since the very inception of centralized buying, the great concern of purchasing has been to assert its individuality as a specialized function and department. We have had to struggle free from the domination of technical and manufacturing departments, and to resist new dominations from other departments, in order to exercise and demonstrate the advantages of sound purchasing policies and methods on their own merits.

Now that purchasing development is definitely headed in the direction of the broader responsibility of materials management, the emphasis has changed. Materials are the common denominator of many company activities, The effort must be toward coordinating them in an effective working relationship with all departments in the interest of better teamwork toward the over-all goal of profitable company operation.

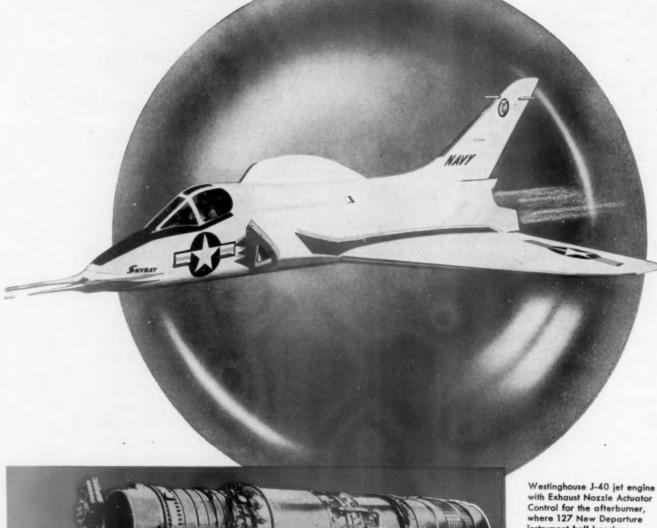
The science of management can set up a precise organization chart, with all its little boxes at their various levels to indicate the different functions that have to be performed. The pay-off comes when you insert the connecting lines that show the relationship of the functions and the channels of communication and authority. There is no fixed pattern for that.

Materials management doesn't necessarily imply direct control at every stage. It may range all the way from complete supervision to better means of communication, with a dozen degrees of group effort and integration in between.

We like to think of ourselves as specialists. One of the characteristics of the specialist should be an appreciation of the skills and services of other specialists. But more and more, we are called upon also to be managers. The basic characteristic of the successful manager is his ability to coordinate and channel special services to the desired useful common end.

Stuart F. Henritz

New Departures
Join the Navy!



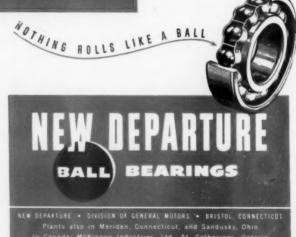
Design by Dougles - power by West's a

where 127 New Departure instrument ball bearings contribute extreme precision and efficiency.

Design by Douglas . . . power by Westinghouse . . . precision by New Departure. That's the Navy's F4D SKYRAY jet—first carrier-based plane to hold the world speed record—753.4 mph.

Among other applications in the SKYRAY, there are 127 New Departure precision instrument **ball** bearings in its Westinghouse Exhaust Nozzle Actuator Control. This control maintains proper engine temperatures, and demands the utmost in bearing accuracy and efficiency. New Departures meet these demands.

Throughout defense and industry, you'll find New Departures making good products even better. Learn how these fine ball bearings can help your design . . . talk with your New Departure engineer today!



For More Information Circle No. 159 on Inquiry Card-Page 17

Highlights

This issue's important features summarized for the busy reader



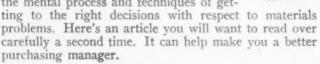
Purchasing problem of the month—and of each recurring holiday season—is how to deal with Christmas Gifts from Vendors. Best way is to discourage the practice before it becomes a problem. How? On page 93 a Cleveland purchasing agent describes the method used in his com-

pany this year. It's a clever series of letters, in humorous vein that avoids giving offense, yet puts the point across in a way that puts the vendor himself on record. Best of all, it gets results.

Military Procurement is constantly criticized for its apparent wastefulness and lack of efficiency. Critics dote on citing examples of "red tape" procedures, but often without an understanding of the broader public interests that these procedures are designed to serve. An able and experienced Navy purchasing officer points out (page 71) how sound purchasing practices are put into operation, and competition is maintained, within the framework of prescribed regulations. The one inherent weakness in the system, he finds, is the lack of long range vendor relationships, as compared with private industry.

Cost Saving Purchasing programs are not necessarily big and dramatic. The opportunities are present in scores of every day commonplace transactions, if the buyer is alert to see them. The examples on page 88 are from the company that has proved and popularized the slogan "Purchasing Is A Profit-Making Function."

The scope of purchasing is steadily progressing toward the broader concept of Materials Management. Management implies the responsibility for planning and making decisions. The article on page 77 is a thoughtful and practical analysis of the mental process and techniques of get-



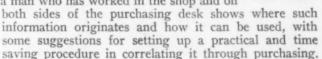
Good planning depends in large part upon having timely

and accurate Trade and Industry Statistics. Some of the basic governmental data is now 10 years old. The Census Bureau is now preparing to collect and tabulate current data. The official interview reported on page 96 gives details on this project. Be ready to help promptly when the Census people come to your company for information.

It's almost time for taking the **Annual Inventory**. Do you dread the job? Turn to page 69 for twenty-one helpful suggestions that will make it quicker, easier, and more accurate.

Inventory control will be more effective all year round if you have a reliable guide to Economic Ordering Quantities. The table shown on page 109 provides such a guide, easy to use, in terms of annual usage (dollars) for any given item, including the effect of various quantity discount rates. For the mathematically minded,

the detailed calculation is also explained. Maybe we've been too arbitrary in our insistence on Keeping Salesmen Out of the plant—particularly in respect to our machine tool purchases, where the problem is one of getting all available information on the best tool to do the job. On page 98, a man who has worked in the shop and on



An important new group of materials, only four years out of the pilot plant stage, is making tremendous strides. The Epoxy Resins have found a place in product finishing, tooling, and bonding, and new applications are constantly being developed. Learn about them on page 114.

Don't overlook these regular monthly departments, compiled for your information: the Washington Report (page 13); New Catalogs (page 17); New Equipment and Products (page 128); News of Your Suppliers (page 22), of Association Activities (page 174), and of Men in Purchasing (page 234); Keeping up to date on such developments makes for better buying.

A complete classified index to the editorial contents of PURCHASING for 1954 is yours for the asking. Give your back issues quick and permanent reference value by using it.

STEEL...one piece or a truckload



ties unsurpassed. But our business depends on small orders as well, and you'll find we never lose sight of this fact. Whether you want one bar or a thousand-one sheet or many tons, you'll get courteous service-quick delivery. Dependable, certified quality, too. Call us and see.

JOSEPH T. RYERSON & SON, INC. RYERSON STEEL

Principal products in stock: Bars, structurals, plates, sheets, tubing, alloy steel, stainless, re-bars, etc., also machinery & tools

PLANTS AT: NEW YORK . BOSTON . PHILADELPHIA . CINCINNATI . CLEVELAND . DETROIT . BUFFALO PITTSBURGH . CHICAGO . MILWAUKEE . ST. LOUIS . LOS ANGELES . SAN FRANCISCO . SPOKANE . SEATTLE For More Information Circle No. 160 on Inquiry Card-Page 17

Aids for the Annual Inventory

By J. E. Bedford, Associate Professor, Armstrong College, Berkeley, Cal.

PURCHASING AGENTS who have long faces and headaches on New Year's Eve may be anticipating the year-end physical inventory instead of a celebration. Dreaded though it may be, it is necessary to take a physical inventory of the raw materials and parts in stores, goods in process, and finished goods in a plant. Tradition has decreed that, in most cases, this chore be done at the end of the calendar year. And since it's a function of stores, usually closely allied to purchasing, it frequently happens that the fellow who bought the stuff is the one who has to count

If the plant's physical inventory is included in the purchasing executive's responsibilities, he will have plenty to think about. A lot of questions keep popping up in his mind before The Day.

Will there be an inventory shortage when the count is made?

How much?

What is the cause?

Will the inventory crew have long hours of overtime?

Will they miss counting something?

Will they count some items twice?



Will there be delays in pricing the inventory?

Will the results show to good advantage on the balance sheet?

Will the prices give the plant a tax advantage?

No wonder the purchasing executive has a headache—and before New Year's Eve, too.

Here are 21 ways to help make your physical inventory quick, easy, and accurate. Might eliminate a few headaches, too!

1. Sell the Importance of Inventory

Plant employees who are called in to help take the physical inventory may not realize how important it is to identify materials accurately and to have an accurate count. Naturally, they are interested in getting through with the job as quickly as possible, but they may not know that the plant's inventory record affects net profit, income tax, property tax, and the perpetual inventory of parts and materials. Taking time to explain to them how important it is, and why, before the actual inventory starts, will give them a better attitude and will get better results.

2. Encourage and Accept Suggestions

You have your own ideas on how the job should be done. But you may not have all the best answers. While selling the importance of the annual plant inventory, many purchasing officers have found it wise to encourage and to accept suggestions of the employees. Slow counting and listing methods can be changed to quicker and better ways. Then too, the employees who submit these suggestions feel that they are more important in the annual count and will turn in a better performance.

3. Select Crew Carefully

Counting and recording may seem to be a simple job, but some purchasing executives have discovered that not all employees are able to handle the work of a physical inventory satisfactorily. It's an unfamiliar job to most, and some cannot adapt themselves quickly to unfamiliar tasks. Every employee selected for this work should be checked on the physical, mental, and moral qualities that are required for a plant's annual physical inventory. Choose the best people, to get the best results.

4. Provide Adequate Instructions

Valuable counting and listing time may be lost when the employees do not know exactly what to do. You don't want them to waste time by running back to you for dozens of little decisions. Worse vet. you don't want to have them making wrong decisions. The man in charge of inventory will find it helpful to take time in explaining how to count, how to list, which way to move in shelf sections, and how to handle any special problems that may arise. Pre-inventory training on the all-important "how" will make the stock count more consistent, more accurate, and will insure a quicker completion.

5. Establish and Explain Inventory Rules

Some rules of conduct, beyond the strictly counting and listing procedure, will also apply. Smoking may be prohibited, for example, in certain plant areas where flammable materials are stored. During inventory the employees may forget this rule and light up in dangerous areas. Mentioning such rules at the preinventory meeting will serve as a reminder and will eliminate any doubt. Eliminating doubts will avoid a slow and indifferent inventory in your plant.

6. Blueprint the Inventory

A complete, efficient inventory

requires a plan. A rough outline map of the plant, with all sections designated, is all that is needed. Inventory assignments are made from this map. This insures that all areas will be covered, giving a complete count of all stock. It will avoid confusion as to how far an inventory team should go, and where it should count next. A plant plan also provides a handy place to record all inventory sheet numbers issued and returned, for a double check on coverage and for future reference to original sheets.

7. Organize Stock Early

Regardless of how good a house-keeper your storekeeper may be, there will be some parts and supplies that get mixed up. Checking over all sections of the plant before the inventory date will bring to light any places where there is a duplication of storage and where certain items have been placed in the wrong storage section.

8. Pre-price Stock Items

Unless your accounting department gives definite instructions to the contrary, current price quotations should be used in determining the inventory price. Preparing a list of prices based on recent invoices or current quotations will save time in the final stages of pricing the plant inventory. Adjusting any prices before inventory will make the final total more accurate and will keep asset and profit values in line with good business practice.

9. Liquidate Odds and Ends

Obsolete items and scrap that is liquidated before the physical inventory will save work in counting and listing. In addition, it will clear the perpetual inventory records and be helpful in determining the needs of production departments more accurately. Everything in the plant should be worth its inventory valuation when the physical count is made.

10. Count Reserve Stock First

If there is stock that is not needed for immediate production, it can be counted in advance. When this is done, some system should be set up for withdrawal of this reserve, to insure an accurate total when the final count is made.

11. Stop Stock Shipments

Shipments that are received during the inventory period are apt to get mixed in with regular stock. This can be charged to book inven-

tory and not counted, or counted when it has not been charged. Either way results in an inventory variance. This can be avoided by notifying carriers that shipments will not be received during the time of the physical inventory.

12. Stop Production During Inventory

This is best, but not always possible. Even if a record is kept of withdrawals from counted stock, there is always a possibility of error. A night or week-end inventory may be the solution if there are enough qualified employees available to do the job quickly.

13. Use Standard Valuation

There are several methods of inventory valuation that can be used in compliance with income tax laws—cost, the lower of cost or market, last-in first-out, first-in first-out. The main rule that must be followed is that the inventory valuation must be consistent.

14. Number Listing Sheets

Standard forms for plant inventory have a space for a sheet number. Assign a serial number to each sheet and record it on the inventory blueprint. Then, any lost sheets can be traced quickly. It also provides a check on the completeness of the final tabulation.

15. List Stock in Duplicate

This provides an easy way to check the accuracy of column totals by giving the original and duplicate sheets to different tabulators for extension and totaling. Most plants file original listing sheets with permanent records in the accounting department. The duplicate helps purchasing to check perpetual stock records and to highlight obsolete items.

16. Make a Special List of Unwanted Inventory

Obsolete parts and material and plant scrap can be eliminated by keeping a record of this inventory. Periodic counts during the year will speed the liquidation.

17. Check Quality

Although the physical inventory is primarily concerned with a quantity count, this time provides an opportunity to check quality as well on certain items where trouble may have existed.

(Please turn to page 272)

How Efficient is Military Procurement?

By Captain Lamar Lee, Jr., (SC), U. S. Navy, Commanding Officer, Ordnance Supply Office, Mechanicsburg, Pa.

PURCHASING for the military services is done within the framework of not only prescribed procedures but of certain prescribed policies enacted by Congress in the broader national interest. Therefore purchasing performance cannot be evaluated strictly by the same standards applied in private industry, but must be considered in the light of the broader goals and the scope of operation permitted to the purchasing officer under this pattern, making allowance for the price of impartial, democratic action.

By and large, the system affords the opportunity for sound and effective procurement, and is carried out with good judgment and proficiency. The Navy is well aware of the dynamic and strategic potentials of good purchasing and is bending every effort to staff and operate its procurement activities for maximum performance. For reasons autlined in this article, administrative costs are necessarily high. The one inherent weakness in the system, as compared with purchasing for private enterprise, lies in the field of continuing vendor relations.

N the past few years, military pur-chasing has come in for some pretty serious maligning. It has been attacked, at one time or another, by almost every organized group in the country that is even remotely interested in government procurement. The very scope of the attack indicates something is wrong. And if taking one hundred days to do what can be done in ten days is wrong, if paying exorbitant administrative charges is wrong, then the attackers are accurate in their charges. But before we let these facts arouse us to the point that we demand that someone be put in jail, let's ask and answer a few propitious questions.

Why did the attack on military procurement start in 1951? Why didn't it start sooner or later? The answers to these questions contain many interesting facts for consideration.

Ground Rules for Procurement

Before 1951, the military procurement officer had as his basic instructional guide the Armed Services Procurement Act of 1947. This Act, written with the advice and counsel of outstanding congressional, military, and civilian procurement officials, integrated the lessons of World War II with the sound procurement principles already in effect.

This discreetly adequate Procurement Act of 1947 is generally accepted as providing an excellent set of ground rules for the regulation of military procurement. These rules, however, do not provide the basis for making military procurement as efficient as industrial procurement. Unfortunately, there is no safe method for accomplishing this lofty purpose. In the procurement phase of our government, as in many others, there is an inescapable price that must be paid for living in a democracy. Although the military purchasing officer habitually gets good, competitive prices on his contracts, his total costs are high because of exorbitant administrative expense. His lead time is long because of administrative red tape. It is not unusual for the government to take 90 days to purchase something that industry can buy in two weeks. To understand these facts, one must understand how the Services buy.

Military purchasing is done by two methods—by advertising and by negotiation. All of the Armed Forces' requirements are bought under one of these methods.

Advertised Bidding

The advertised method of purchasing acquired its name back in the days when requirements were actually advertised in the daily newspapers. This was the principal method of procurement used by the Services to secure their supplies up until World War II. The basic authority for this system of procurement stems from legislation passed in 1861. This legislation pro-



In his assignment as Commanding Officer of the U. S. Naval ordnance Supply Office, Mechanicsburg, Pa. (see cover photo), Captain Lee is responsible for the management of an inventory of equipment and repair parts valued at nearly one and one-third billion dollars. The responsibility includes replacement procurement.

Captain Lee graduated from the U. S. Naval Academy at Annapolis in 1933. Like all other officers of the Supply Corps, he received formal indoctrination in procurement early in his career, completing the course

at the Navy Finance and Supply School, Philadelphia, in 1935. Since that time he has been consistently associated, directly or indirectly, with procurement matters.

lea

per

ne

ess

sel

Th

by

tis

fa

CC

of

g

I

The beginning of World War II found him serving as a Lieutenant on the aircraft carrier USS Wasp. At the termination of the war he was a Captain (the youngest man to hold this rank in the Navy in sixty years) in charge of the important Naval Supply Depot, Guam, which was then issuing material at the almost incredible rate of a half million dollars per month.

Captain Lee's naval assignments following World War II have enabled him to continue to pursue intimately his procurement interests. As Chief of the Navy's Inventory Control Office, Washington, he was concerned with the development of policies and procedures to assure a proper balance between supply and demand for individual items of material and equipment required for the construction, operation, and maintenance of the Navy.

Later he became Commanding Officer of the Submarine Supply Office, Philadelphia. Preceding his present assignment, he was Director of the Purchase Division, Bureau of Supplies and Accounts. He graduated from the Naval War College, Washington, in 1954. For several years past, he has been a familiar figure at meetings of the National Association of Purchasing Agents.

Captain Lee is the son of a retired naval captain and the brother of three military officers—two Navy, one Army. For his wartime service, he received the Legion of Merit, the Secretary of the Navy's Commendation Medal, and several letters of appreciation from flag officers, including Admiral Nimitz. He is also the recipient of three area campaign medals and the World War II Victory Medal.

vides, in essence, that purchases shall be made by advanced public advertising or sealed bids, and that these bids shall be publicly opened at a designated time. Under normal circumstances, an award is made to the lowest responsible bidder meeting the advertised specifications.

The system of formal advertising is still the best method of procurement when the following four conditions prevail:

1. When definitive specifications are published for the required prod-

2. When an adequate number of qualified suppliers are capable of complying with the specifications.

3. When these suppliers are actively competing for the business.

4. When there is adequate time for the formalities of advertising and opening of bids, incident to this method of procurement.

When all four of these conditions prevail, procurement by advertising provides a means of getting the maximum return for the taxpayer's dollar, while at the same time awarding government contracts impartially among suppliers and minimizing opportunities for fraud and favoritism in the process.

It is these last democratic objectives of awarding contracts impartially, and minimizing opportunities for fraud and favoritism, that run up the costs of government procurement. For example, the military procurement officer is well aware that it is not an economical procurement practice to solicit more than six bids in connection with any specific purchase. He knows that normally this is the maximum number used by expert civilian purchasing agents. And yet, the military purchasing officer must often send bids to additional hundreds of suppliers more than he knows are necessary to obtain full and effective competition. This is not intended to imply that any military purchasing officer would be so foolish or uninformed as to send out hundreds of bids for an item or items of small money value. But, as the money value of the procurement increases, the used percentage of the bid list (which in some cases contains the names of six or seven hundred companies), must also increase, until the entire list is used.

This is how the exorbitant administrative charges accrue. A procurement involving 200 bidders, for

example, may require the issuance of about 6,000 sheets of paper for the bids, perhaps 10,000 sheets of drawings, plus 200 copies of specifications which normally consist of from ten to twenty pages. One Navy purchasing organization issued so many sheets of paper in one month that, had the sheets been stacked, the pile would have reached to the top of the Empire State Building.

To further disturb an already embarrassing administrative picture, the response to invitations for bids is normally only 10%, and a large percentage of those responding are not qualified to receive an award (mistake in bid, unresponsive bid, irresponsible bidder). Thus, millions and millions of sheets of paper are wasted in addition to the thousands and thousands of man-hours required to prepare them.

In summarizing advertised procurement, it can be concluded that this method of procurement is excellent when the four essential conditions prevail. When used, it perforce increases procurement lead time and generates costly administrative expenses. In return, however, it insures impartiality, the absence of which would cost much more than the cost of increased

lead time and administrative expenses.

If the conditions which make advertising the best method of procurement do not prevail, then the negotiation method of procurement must be used. Negotiation is a process whereby the buyer and the seller bargain to reach an agreement as to the terms of a contract. This bargaining may be done either by correspondence or by the negotiator and the contractor talking face to face. The latter method of negotiation is usually employed in complex contracts and in contracts of large dollar amounts.

During periods of national emergency, the conditions required for procurement by advertising do not always prevail. In addition, when the Nation is fighting a war for its very existence, procuring activities of the Armed Services must be concerned not only with price and performance but also with the speed with which procurements can be made, and with the rapid development of additional sources of supply.

Even in peacetime where there is

no emergency, many phases of present day military procurement require the use of negotiation. For example, the high degree of mechanization of the Armed Forces sometimes requires a standardization of technical equipment. Usually such standardization can best be attained by negotiating for additional equipment and spare parts from a supplier whose product has already proved satisfactory.

A substantial initial investment and extended period of manufacture is required for the mass production of such military items as landing craft and radar. Since this is true, it is desirable that the Services be allowed to negotiate contracts for such equipment with producers who have acquired the necessary know-how. Contracts for experimental, developmental, or research work must be negotiated because accurate cost estimates and precise specifications required for formal advertising are seldom available.

Contracts are placed by negotiation under four basic conditions.

1. When a sole supplier makes

the item which is required by the Navy.

2. When many suppliers who can make the item are available but where time does not permit the lengthy procurement process involved in formal advertising.

3. When definitive specifications have not been developed.

4. Where a seller's market deprives the Navy of a fair price which a free competitive market guarantees.

Except in the case of a sole supplier, the impartiality of the advertised method is maintained to a great extent in negotiation. Yet, a more flexible, responsive, and challenging method is provided to the contracting officer.

Proposals Are Evaluated

It might appear that the negotiation of contracts reduces competition of suppliers, thereby resulting in correspondingly higher prices being paid by the government. This is not the case. While it is true that in the interest of conserving time, the number of suppliers afforded an opportunity to offer a quotation

These are the orders outlining the responsibilities of the Mechanicsburg Naval Ordnance Supply Office.

ORDNANCE SUPPLY OFFICE

MISSION



DEPARTMENT OF THE NAVY BUREAU OF SUPPLIES AND ACCOUNTS

BUSANDA 5450.28A

L Oct 1953

BUSANDA INSTRUCTION 5450, 28A

From: Chief, Bureau of Supplies and Accounts
To Distribution List

Subj. Ordnance Supply Office, Mechanicsburg, Pennsylvania, mission of

- 1. Purpose, The purpose of this instruction is to promulgate the mission of the Ordnance Supply Office, Mechanicaburg, Pennsylvania
- 2. Cancellation. This instruction cancels and supercedes BuSandA Instruction 5450, 28.
- 3 Organizational Relationship. The Ordnance Supply Office has been established as an activity of the Navy under the Management Control of the Bureau of Supplies and Accounts. Military Command and coordination control is exercised by the Commandant, FOURTH Naval District, The Bureau of Ordnance exercises Technical Control over material and technical functions under the cognitance of that Bureau. Technical control over other material and functions is exercised by the appropriate bureau or office as assigned. The Ordnance Supply Office will operate in an Active Status.
- Mission. The Ordnance Supply Office will perform inventory contrifunctions in accordance with the instructions and definitions as issued by higher authority.
- 5. Functional Tasks in carrying out the assigned responsibilities, the Ordnance Supply Office will:
- a. Determine system material and fund requirements to meet th needs of the Naval Establishment and other approved programs.

- b. Designate levels of supply for material and provide for the ecessary allocation of material under procurement and the distri-
- c. Determine the existence and quantity of obsolete or salvageable items of material under the cognizance of the Ordnance Supply Office and effect proper disposition.
- d. Establish and promulgate methods and procedures for record-
- ing, reporting, and administering material under its cognisance.

 e. Procure materials as required to maintain designated stock.
- Maintain records of material under its cognizance which is on order, perform follow-up action as necessary to assure timely delivery
- g. Participate in provisioning actions, recommend initial procurement of repair parts and components and schedule the delivery of
- h. Determine retention levels for material and dispose of System
- Establish the distribution system for material under its cognisance subject to approval of management bureaus whose activities
- j. Insure proper preservation, packaging, packing and storage of its material.
- ii. Identify, catalog, determine interchangeability, supersedures, and recommend substitutions for all ordnance material; establish and promulgate stock numbers and carry out assigned responsibilities in the Federal Cataloging Program.
- 1. Propare, distribute, and revise Ordnance Allowance Lists.
- m. Examine all ordnance alterations and advise the Bureau of Ordnance or other designated activity of material which may be available for accomplishing oRDALTS prior to any procurement thereof, and recommend repair parts to be furnished along with the material for accomplishing such alterations.
- n. Assemble and analyse usage data as required to determine the status of supply and demand for ordnance material.

- the transfer of cognizance of material which may be inappropriately stocked by the Ordnance Supply Office.
- p. Establish and promulgate unit prices for material under its
- q. Establish at the Ordnance Supply Office an inspection service administered by an assistant of the Inspector General of the Supply Corps, to conduct inspections of the performance of supply functions
- r. Compile data and submit required financial and statistical
- Maintain field service units to visit activities maintaining stocks of ordnance material; to render service as required; to solve specific field problems and to assist in promoting efficiency through
- t. Prepare mobilisation plans pertaining to the distribution average for material under its commance.
- u. Prepare industrial mobilisation plans.
- v. In addition to the performance of the above duties for assigned ordnance material, including special waspons material, the Ordnanc-Supply Office will collaborate with the Armed Percess Special Waspon Project on the provisioning and development of Navy Allowance Liest and in the development of maintenance policies and procedures for special waspons material, and maintain listions with Freet Commander waspons materials.
- w. Perform other duties as assigned by the Chief, Bureau si

M. L. ROYAR CHIEF, BUREAU OF SUPPLIES AND ACCOUNTS is reduced to those believed to be qualified, nevertheless in all cases a sufficient number of suppliers are contacted to assure that adequate competition is obtained. These sources include suppliers that are most likely to be responsive with prices advantageous to the government.

In many instances, however, the nature of the requirement may be such that only a few suppliers are qualified to manufacture the material required, thus, price competition may be negligible or inadequate. In such cases, the establishment of a sound price depends upon analysis of price comparisons, contractor's cost breakdowns, and his operating and financial statements. Hence, the government depends in some instances upon competition of suppliers to obtain the lowest price, and in other cases, where competition is limited, upon an analysis of various costs and financial statements to assure the reasonableness of proposed contract prices.

The Over-all Public Interest

When competitive quotations are received and analyzed, negotiation may be undertaken with any number of suppliers whose quotations appear most favorable to the government. More than this, the negotiation permits the government to accept minor deviations to undeveloped specifications. This is particularly important in the seller's market where material shortages may force the use of alternate materials. Likewise, urgent delivery requirements can be realized by negotiating with suppliers to obtain their assent to smaller multiple awards. At the same time, some recognition is given to the economic fact that a minimum production run will vary from plant to plant. Furthermore, the nation is assured more economical utilization of its industrial potential and more effficient use of labor and material by the closer pricing which can result from the negotiating process.

While negotiation has many advantages over the advertised method of procurement—for example, less paper work—there are certain requirements associated with negotiation which prohibit the use of the economical procedures normally associated with private industry. One such requirement is that preference be given to suppliers located in certain sections of the country which have been classified as distressed labor areas.

Another requirement is that preference be given to groups of suppliers classified as small business, i.e., concerns employing less than 500 persons. Moreover, a special agency, the Small Defense Plants Administration, has been established by Congress to collaborate with the military in placing contracts with small business concerns.

It must be obvious that programs for the relief of distressed labor areas or for the benefit of a particular group do not add to procurement efficiency, nor were they intended to do so. This being the case, it must be presumed that the overall public interests were weighed against the increase in procurement lead time and administrative costs, when these programs were inaugurated by Congress.

In summarizing negotiated procurement, it can be concluded that the negotiation method is generally more administratively efficient than advertised procurement. By the same token negotiated procurement can never, with some few exceptions, be as speedy and efficient as procurement in private industry, for the reasons previously set forth. So long as the accent in military purchasing is on impartiality, as it should be, and so long as it is mandatory to accomplish social aims through defense spending, military negotiated procurement will not compare favorably with many phases of industry procurement.

Preferential Buying

Against the background of information thus far given, the question of why the attack on military procurement started in 1951 can now be answered. Prior to the Korean war, the Armed Services Procurement Act (which, as has been explained, is an excellent instrumentality for assuring fair and impartial treatment to all bona fide suppliers and manufacturers) was allowed to operate freely. The Korean crisis, however, brought about trenchant changes. This crisis resulted, among other things, in the first partial mobilization in the Nation's history, which action developed conflicting public interests of great intensity. In an all-out war such conflicting interests, if they do develop, either disappear quickly or lessen to an insignificant point. In a partial mobilization they remain intense.

The force of these interests caused certain socio-political actions to be taken in connection with

military procurement. These actions took the form of imposing changes to the Armed Services Procurement Regulations-changes designed to benefit specific groups, not the Nation as a whole as the Armed Services Procurement Act was designed to do. Thus, impartiality was replaced by partiality. Some groups were permitted to benefit at the expense of others. For example, companies in distressed labor areas received preferential treatment; small business received aid in the form of set-aside items and an opportunity to meet the lowest bid received; the military base was obtain multiple broadened to sources of supply whenever there was only one supplier; subcontracting was encouraged to spread military orders; and the Buy American Act gave preference to domestic suppliers.

The military purchasing officer is definitely not in a position to judge whether or not military procurement should be used for sociopolitical purposes. The power to make this decision rightly rests with those officials of our Government who are responsible for the welfare of the Nation as a whole. On the other hand, when military procurement prices are high as a result of such actions, it should be clearly understood by the Nation that this condition is the result of political and economic pressures, not the result of a weak military pro-

curement system.

All of us, civilian and military alike, are eagerly interested in the disposition of our tax dollars. Therefore, we must presume, whenever a decision is made to increase the costs of military procurement for socio-political purposes, that the decision is a wise one. We must presume that those officials of our Government having the power to make this decision have weighed the benefits to be achieved by such a program against the price that must be paid for it, and have by this process determined it wise to sacrifice procurement efficiency to gain other efficiency.

Vendor Relations

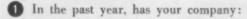
No objective look at Government purchasing would be complete without an examination of the relationship that is fundamental to efficient purchasing. This is the relationship of understanding between buyer and seller. The buyer understands that the seller's product is good, that it

(Please turn to page 288)

PURCHASING OPINION

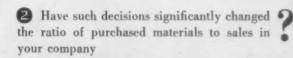
Does The Trend In MAKE-OR-BUY DECISIONS Follow Market Conditions?

The question of whether to make or purchase certain items recurs constantly among companies using a number of parts in the manufacture of their products. Contributing to the decision to make or buy are many factors such as price, quality, assurance of supply, labor conditions, etc. To determine the effect of these factors and the current trend in make-or-buy decisions, we questioned purchasing men all over the country. Their combined answers follow.

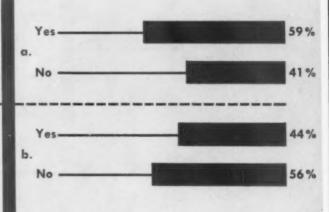


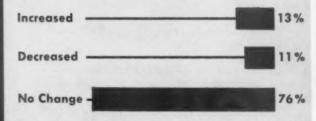
a. Decided to make materials or products heretofore purchased from outside sources

b. Decided to buy from outside sources materials or products previously made in your own plant



3 Are any important make-or-buy decisions now being studied by your company



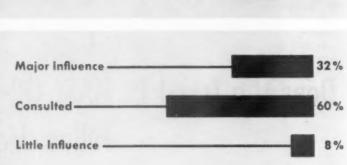




Do you see an over-all trend in industry toward greater self-sufficiency

Yes _______ 65%
No ______ 35%

In your company, what part does purchasing have in making make-or-buy decisions



What are the major considerations in deciding whether or not to move a given item into your shop

(In order of selected importance.)

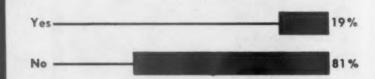
Purchase price must be higher than shop cost.

Purchase price must be higher than shop cost plus a fair profit.

Desired quality is not obtainable by present method.

Try to keep plant busy; no formal cost analysis is made.

Do you believe that moving items into your own plant during periods of excess capacity will hurt your vendor relations enough to handicap you during a sellers' market



WHAT THEY SAY

"Proper quality seems obtainable only by running in our own shop, or placing an inspector in the subcontractor's shop."

"This 'do-it-yourself' program will put a lot of business out of business."

"Vendors should pass on savings rather than wait for 'squeeze' on prices — or expect more 'make' decisions."

"Make or buy decisions are always dependent on shop load as adjusted in accordance with cost differential on each item. Burden absorption is a major consideration, always."

"Our trend is toward new products, but not necessarily self-sufficiency. We do not intend to become 'experts' in all fields."

"Most of our decisions involve services rather than materials or products."

"In a busy program, service and delivery are more important than cost."

"Current buyers' market causes greater stress of cost control."

"Available capacity in our shop has a great bearing on the amount of work farmed out."

"Expense of providing machine tool facilities makes many moves unprofitable."

"Greater emphasis must be placed on self-sufficiency in order to effect lower costs, greater burden absorption, and improved position in a highly competitive market."

"Purely a matter of economics."

The Practical Art of Materials Planning

- ... How to think more effectively
- ... How to reach right decisions
- ... How to put policies into action



By Stanley E. Bryan
Professor of Management
University of Washington

ANAGEMENT involves mental work rather than physical work. It rests more on the social sciences than it does on the physical sciences. It deals with ideas and people. Clarence B. Randall, in his recent book, "Freedom's Faith," says that he believes the most important attribute of management is that of making decisions. The outstanding characteristic of the good executive, according to Randall, is his capacity for making up his mind and then translating thought into action. Ralph Davis, in "The Fundamentals of Top Management," reminds us that planning is an "organic function" of management and that a plan is the tangible evidence of thinking on the part of management.

This writer proposes to discuss the practical art of materials planning as it might affect the executives responsible for the procurement and control of materials. Surely planning is necessary if the executive function of materials management is to be effectively performed. The term planning is here used in a very general sense to include conscious mental activity aimed at making a decision, establishing a policy, or creating a plan. No attempt is being made to precisely define planning except to associate it with creative thinking.

Planning is often slighted, even by the best executives. Planning is intangible and difficult work. It is difficult, for example, for a purchasing agent to find the time for re-

flective thinking. The pressure for immediate decisions, the insistent ring of the telephone, the personal attention necessary to aid his working colleagues prevent him from taking the time on the job.

Often, of course, consciously or unconsciously, the purchasing man takes his planning work home with him. Or he may pursue it consciously or unconsciously at offthe-job social activities. During working hours on the job, however, there is a tendency to feel obligated to perform tangible work. This is characteristic in most of us. During the normal working hours we tend to feel obligated to talk to people, check papers, do things with our hands. The fact is that we feel uncomfortable, even a little guilty, just to spend our time and effort thinking reflectively.

This is particularly true in this era of group management. Any person, whose desk is in open view of his colleagues, can conjecture what comments would develop among his colleagues if he dared to just sit at his desk without appearing to be "busy". Add to such considerations the fact that the process of planning is not too well understood even by psychologists and one can understand why planning is often slighted.

A CHECK LIST FOR CLEAR, CONSTRUCTIVE PLANNING

(In the following classification of policies, no attempt is made to develop particular materials policies, as it is recognized that each situation is different. Some of the aids to thinking are, however, applied to materials policies. Why not think about your own situation, using the following classification?)

Policies which might be developed using preferred alternatives and the "excluded middle"

- A. Yes-No Alternatives—the middle excluded
 - 1. Reciprocity?
 - 2. Speculation?
 - 3. Gratuities?
 - 4. Confidential quotations?
 - 5. Personal purchases?
 - 6. Acceptance of premature deliveries?
 - 7. Others?

B. Either-Or Alternatives-the middle excluded

- 1. Purchasing Policies
 - a. Centralize or decentralize?
 - b. Make or buy?
 - c. Concentrate or diversify sources?
 - d. Use specification, brand, market grade, sample, or other means of description?
 - e. Use bid, market price, catalog, or vendor assessment to determine price?
 - f. Others?
- 2. Inventory Control Policies
 - a. LIFO, FIFO, average, market, standard cost, or other valuation system?
 - b. Perpetual or periodic inventory?
 - c. Max-min, bill of materials, or executive analysis as basis for requisitions?
 - d. Automatic or analyzed re-order quantities?
 - e. Machine or manual record keeping?
 - f. Others?

II. Policies which might be developed using preferred degree and recognizing the continuum, the problem of semantics, and probability

- A. Any or all of the above mentioned policies in which degree is determined after preferred alternative is selected
- B. Others, in which the decision usually lies between extreme positions, and degree should be carefully considered
 - Degree between forward and hand-to-mouth buying?
 - 2. Degree of reserve stocks to maintain as a safety factor?
 - 3. Degree to which price is to influence purchase?
 - 4. Degree to which purchasing department is to insist that it handle all purchase transactions?
 - 5. Degree to which purchasing department is to adhere to quantities requisitioned?
 - 6. Degree to which vendor-dependence upon the buying company is to be encouraged or discouraged?
 - Other decisions requiring that some degree be determined



Importance of planning

O responsible materials executive would belittle the importance of planning. Much of the materials executive's time is spent in group conferences which are nominally "planning sessions". There is a principle of management to the

effect that to properly accomplish any important activity there should be planning before subsequent performance. A materials manager is probably aware of this maxim. He is also aware of the fact that as an executive he has the responsibility of making sound decisions. Although group meetings help in many instances the materials executive must perform this thinking function largely on his own.

Perhaps one of the most important single generalizations related to the executive process is one often referred to as the Principle of the

Situation: the effectiveness of an executive's approach to a particular situation depends largely upon his ability to secure, and understand, the facts, his courage to face the facts, and his decision to act in accordance with the facts. The situation involves facts about the people related to the particular situation as well as those facts involved in the situation itself.

Situations are always different, although some similarities among situations exist. The executive probably never is in possession of all the relevant facts. The art of executive decision seems to lie in balancing between snap rule-of-thumb actions and the vacillating prolongation required in securing more facts. However, the man with facts, in the planning process, is like the leader in "Gulliver's Travels." He overtopped his subjects by the thickness of a thumbnail, but proportionately he was a great leader.

The process of materials planning encompasses wide scope. It includes the development of broad plans on the one hand and detailed plans on the other hand. Planning is involved in setting up the objectives, goals, missions and deadlines in materials and purchasing operations. It is involved in purchase budgets, performance standards, inventory control procedures. Planning is particularly related to the establishment of purchasing policies. It is even involved in setting up the organization structure for purchasing and materials control. Planning is important in purchasing programs, schedules, projects, methods, specifications, as well as in the day to day work of the department.

Planning provides for the maximum utilization of the Exception Principle by creating the basis for much of the subsequent action to proceed on a routine basis, thus enabling the executive to focus his attention during operations on the significant exceptions to the action as planned.

Planning is an important executive activity.



Can planning

be improved?

HERE are certain limits to planning. Plans and policies may accentuate a tendency toward flexibility. Red tape, habit, tradition, inertia and reluctance to change might saddle an organization with decisions and plans which do not meet the challenge of the changing situation. There is always an element of uncertainty in plans aimed at coping with the future. The more extended the future under consideration the less certainty there is involved.

Some degree of inflexibility is the price which must be paid for planning. Perhaps, however, we can resort to the observation of Nicolo Machiavelli. In "The Prince" he wrote somewhat as follows: fortune plays a great part in affairs, but can be channeled by a leader of foresight. By preparing in time of quiet a leader can be ready for those breaks in fortune that are sure to come. Action is better precipitate than cautious and apprehensive, said Machiavelli, "for fortune is a woman and must be hectored to

keep her under. . ." Planning helps to hector fortune.

Yet the cost to industry of faulty planning, thinking, and decisionmaking is probably staggering to contemplate. It might seem presumptuous, at first glance, for the writer to imply that purchasing and materials executives should improve their thinking. If, instead, the concept presented is the possibility of making good planning even better it might be more palatable. The possibility of improved effectiveness through better decisions, thinking, and planning, is a challenge to even the best executives.

Can planning be improved? Recently, executive development programs have been aimed at improving the mental powers of executives. The general approaches might be divided into (1) group methods and (2) individual methods.

Most of the executive development programs have concerned themselves with group methods and the use of such devices as problemsolving sessions, brainstorming conferences, committee and multiple management, the use of the case method and consultative supervision.

Individual methods have been explored in books such as Richard Weil, Jr., "The Art of Practical Thinking," Alex Osborn, "Your Creative Power" and "Applied Imagination"; and William J. Reilly, "The Twelve Principles for Straight Thinking."

Various methods were presented in a Fortune Magazine article in May, 1953. That article was bluntly titled: "Can Executives Be Taught to Think?" The summary of that article suggests certain limits to the hypothesis that planning can be improved through executive development. Management can be taught to improve thinking up to a point. Beyond that point, however, how an executive learns to improve his thinking seems essentially his own business. There is, however, some latitude in which conscious creative thinking, or planning, can be improved. It is within this latitude that this discussion is developed.



The process of

creative thinking

PPARENTLY no one knows too much about the process of creative thinking. Professor Guilford of the University of Southern California has been reported as finding that in twenty-three years up to 1950 only 186 out of 121,000 books and articles indexed by Psychological Abstracts dealt with creativity. Even as laymen, however, we know there seems to be a distinction between (1) subconscious thinking, and (2) conscious thinking.

Intuition or subconscious "hunch" thinking represents a very large proportion of an executive's thinking. Intuition is characterized by the preparation of the mind by the general recognition of a problem, subsequent frustration and laying the problem aside, followed by a "flash of insight" as to the solution of the problem. Because of the importance of intuition or subconscious thinking, Weil, in "The Art of Practical Thinking" stresses the development of "trained intuition" as an executive's prime creative tool. By this he means knowledge of all the "instruments of thinking", stimulated by "purposeful reflection" about concrete business situations.

Conscious thinking, reflective thinking, or reasoning objectively can be distinguished for the purposes at hand by its conscious application by an individual. It is this conscious type of thinking, engaged in by an individual, as distinct from a group, and separate from intuition that is the subject of discussion here.

In conscious thinking, the individual's mental process shifts from reverie to objective reasoning when a problem interrupts the kaleidoscope of reverie. Associated with the present situation are the immediate experiences, the facts immediately discernible, the people involved, as

well as the whole environment of emotions. If the situation is too complicated or the problem too large, the emotions are likely to upset or block the thought process. In such a case frustration or avoidance of consideration conscious Emotional disturbances seem to hamper conscious creative thinking in most instances. In the normal course of conscious thinking, however, the situation is recognized as a general problem area demanding attention

Past experience seems particularly necessary for effective reasoning. Past experience includes background knowledge, vicarious and actual experience, point of view, general methods of attack, and other factors which might make up the sum total of "past experience". A mental correlation of the present situation, present experience, and past experience seems necessary to give meaning to the situation. Past experience would largely determine whether or not emotions will obscure the effectiveness of the mental process. Experience, for example, may give the person confidence and "peace of mind" of one who has met similar situations successfully before. It might have just the reverse effect, too. The emotional relationship to thinking cannot be discounted.

With the mental correlation of experiences, the recognition of meaning established, the next stage in the process seems to be the emergence of ideas. Ideas seem to emerge from the imagination, aided by analogy, deduction, and induction.

Analogy is the process of reasoning from particular to particular, "This idea worked in another case; why not here?", etc.

Deduction is the process of reasoning from general to particular: "A general principle is possibly involved; can it be applied to this particular case?"

Induction is the process of reasoning from the particular to the general: "This particular fact, when associated with that particular fact, seems to indicate a general idea."

Alex Osborn in "Your Creative Power" stresses the concept that creative ideas can be stimulated by various methods. Someone has referred to this concept as "imagineering." Osborn calls for "brainstorming", bringing ideas to life.

Judgment is the process of associating the ideas with the situation and relating them to experiences. It consists primarily of eliminating ideas which seem impractical or unusable, and modifying others to suit the situation. Analogy, induction, and deduction are also used in this process. Osborn is critical of "judicial thinking", which he points out tends to "choke ideas".

From the process of facing the situation, correlating present and past experiences, creating meaning, encouraging the development of ideas, and judging those ideas against the requirements of the situation, the creation of a plan emerges. Randall, in "Freedom's Faith" warns that some very able and conscientious men never make effective executives because their approach to difficult problems is judicial in its quality (agreeing with Osborn); others fail because making up their minds is torture to them and they fear the results of committing themselves to a decision; and still others decide too quickly and too easily without proper regard to experience and the facts of the situation.



The scientific method

HE Scientific Method is an attempt to develop a logical thought process in line with the conscious working of the mental process. The Scientific Method has been stated by an enumeration of various steps. There is no particular agreement as to the steps or their sequence, but in general they seem to be pretty much the same. Actually, listing the steps is a convenient fiction or "check sheet". The thinking process seems to operate more in the nature of multiphase spiral or circle, proceeding from one step to another and around again as another phase of the situation is considered. This is particularly true as new facts are presented, new problems are recognized, and the situation changes.

The Scientific Method can be a useful guide to channel reflective thinking in the direction of a plan or decision. In step form it might be presented as follows:

- 1. Recognition of the problem
- 2. Initial Observation of the situation
- 3. Development of ideas and hypotheses
 - 4. Judgment of the ideas and hy-

potheses (which in turn might require securing more facts and their study or analysis)

- 5. Creation of a tentative plan or decision
- Final Inspection of the plan, with rework or amendment as seems warranted
- 7. Giving the plan or decision a good send-off

As a check sheet the Scientific Method reminds one of the need to recognize the situation and clarify the problem, insures the emphasis upon securing facts and creating ideas, insists that a solution be developed, and suggests putting the plan into action. The Scientific Method is particularly appropriate if there is time to employ it, if the situation warrants its use, or where someone else will have to execute the plan or understand how it was developed.

One of the key concepts which is not stated in so many words, however, is that problems should be faced in relation to their relative priority in importance. Part of the recognition of the problem is a recognition of its relative importance. Chester Barnard, in "The Functions of the Executive", offers

the following guide:

Don't decide questions which are not pertinent.

Don't decide prematurely.

Don't make decisions which cannot be effective,

Don't make decisions which others should make.

Another concept which is **not** stated but which is of the **utmost** importance in applying the Scientific Method is that most situations involve people. Proposed plans and decisions also involve people. It is an axiom of the utmost importance to consider who is involved, as well as what.

Some other "helpful hints" in working with the Scientific Method might include the following. Concentrate on the difference among alternatives, and disregard those factors which will remain the same in all cases. Beware of assumed "facts". Concentrate on present and future costs, not past sacrifice. Isolate those things which are largely uncertain and intangible from those which are largely certain and measurable. Recognize probability and the "law of averages" when dealing with those things which are largely uncertain.



Aids to reflective thinking

THERE are other aids in the complex process of conscious thinking by the individual. Useful concepts of psychology and logic are at hand. Certain psychological

"laws" seem to help explain and aid the thought process. The "law of frequency", for example, reminds us that a repeated experience is more likely to be recalled than one which occurred less frequently. Vivid and recent experiences have more stimulus than their converse counterparts. The "law of effect" is a recognition that we tend to favor

those experiences which were related to a successful conclusion of a situation previously encountered. As a generalization, the more often, significant, and successful our planning and decision-making the more we tend to favor their use.

In conscious thinking every practical executive apparently applies is may differ greatly from what you certain principles of formal logic when he thinks effectively. The "law of identity", for example, says that meanings must remain the same through a particular thinking process. If a materials executive is thinking about "speculation" he should consistently keep his concept of "speculation" the same throughout. (Of course there is no reason why he shouldn't start over again with another concept of "speculation" and keep that the same throughout.) For the purposes of logical reasoning on this particular subject, at this particular time, in this particular instance, "speculation" can not be "not speculation". This is the import of the "law of contradiction". For the immediate reasoning there can be no middle ground between the opposite assertions concerning the same thing. The "excluded middle" allows no middle ground of meaning for the moment-yes or no, true or false, black or white, either-or.

The "excluded middle" seems not in accord with the facts of life

to anyone who recognizes the impact of semantics upon the thinking process. Semantics is the science of meaning of words. Practically, it is the recognition that we think with the use of words, and different words mean different things to different people. What I think "black" think "black" is. Semantics suggests that "black" may actually vary from absolute "black" through all the shades of gray to "white". Semantics helps to explain why we find disagreement among individuals on what would seem to be a simple and generally acceptable proposition. It is well to understand semantics and its effect upon thinking, but rather than refuting the validity of the principle of the excluded middle-particularly as related to an individual's own thought processsemantics suggests a need for allowing no middle ground of meaning for the moment. Consistency in meaning is an important aspect of logical thinking.

The "continuum" is a distinct tool to use in the approach to varying shades of meaning. It recognizes the middle area and the degrees of difference between extremes. If a proposition is neither "ves" or "no' "true" nor "false", "either" nor "or", or neither "black" nor "white" but contains proportions of both, the continuum helps to clarify the

thinking process. If one knows the degree or proportion of respective identities, say of truth and falsity, in a proposition one has a useful aid in reflective thinking.

For example, one might state as a proposition that "speculation is a bad policy in purchasing". Reflection convinces one that this proposition is neither true nor false. More realistically, in a particular situation in a particular company the statement might be restated in form of a question of policy: "To what degree should we allow speculation in our company?" If one recognizes the movement along the continuum from the polar extreme of "badness" in speculation, and can determine a degree in propositions of this kind, one has accomplished a useful process in planning. The continuum is an important concept because most of our propositions are found in the middle portion of the scale.

Classification is another useful tool in planning. Classification is also a recognized tool in materials management. Inventories are classified into raw materials, materials in process, and finished goods. They may be classified as standard shapes and selective shapes. They may be classified by types of physical characteristics or chemical composition. The classification of materials is illustrative of the use of one of the effective tools of thinking,



Thinking applied to

materials policies

DOLICIES are guides to action, presumably based upon planning and creative thinking. Policies are general decisions supposedly arrived at after careful consideration of the particular organization, its objectives and problems, and based upon the best kind of objective thinking. Policies form the background against which the day-today operating decisions are made. As such they should reflect the best

type of executive thinking. Materials policies should show evidence of the practical art of materials planning and the maximum utilization of the aids to thinking.

Materials policies can be made more effective by the use of past experience, "imagineering", and judgment. The Scientific Method is particularly adaptable to the creation of sound materials policies. In developing an acceptable policy it is possible to concentrate on the difference among alternatives and use the laws of logic. Using the concepts of the "excluded middle", semantics, probability, and the continuum, policies of a stable nature which reflect good management thinking can be developed. Classification is helpful.

The accompanying check list may serve to start and channel your thinking in the right direction.

Getting the Facts on Tool Performance

How Ford Motor Company makes sure of getting maximum value in its purchases of perishable tools

By Dwight G. Baird

A COORDINATED and cooperative program of research and testing of perishable tools and supplies, coordinated with purchasing, is resulting in considerable savings annually to Ford Motor Company, Dearborn, Mich.

From a small central Tool Trouble Department for the Detroit area, this activity has been expanded into a well-organized operation, with each plant and each division having personnel assigned to tool trouble and analysis. A central staff activity at Dearborn provides functional supervision.

There are two major groups of tool analysts. At the plant level one group makes comparison tests and evaluation of tool performance and reports its findings to Purchasing, General Stores, and Manufacturing Engineering (plant, division and staff). This group keeps in close touch with tool crib foremen, departmental foremen, tool room, tool salvage and tool grinding, and is on the alert to detect excessive usage or breakage of tools, frequency of

CROSS

Aid to automation: Tool control board in Ford Motor Company's new Cleveland Engine Plant is used in the capacity of preventive maintenance. It stores replacement tools and automatically records life of tools in operation in huge multi-station transfer machines. Preset counting dials, equipped with automatically operated lights, signal warnings to machine job setter when a particular drill, reamer or tap requires changing. When tool in operation in machine reaches life-expectancy limits, the board flashes warning light and tool is changed at an opportune time before mishap occurs. This new method of tool control avoids costly and time-consuming shutdowns, reduces tool breakage, and improves quality of machining work.

grinds, and all other matters concerning tools. Its personnel maintains tool records, copies of tool tests, and other reference material which remove the guesswork from tooling. Another group at the divisional level specializes in tool research and development, tests new tools, approves the designs of tools, passes judgment on tool changes, keeps records of tool performance and

TOOL NO. (PLANT) TEST NO. 3 DATE STARTED 6-10-53 DATE COMPLETED 6-15-53 TOOL COST ANALYSIS COMPIDENTIAL - for use within Ford Nator Company only HOLMLY PROD. AT 80% EFF. PLANT DEPT. DEPT. TOOL NINE, DESCRIPTION T.C. CHRISERING TOOL PART MORE, NO. SETERIAL (NO., YYPE) 'EE' STEEL FORGING BACHINE MORE, NO. EKCELL Q OPERATION MORE, NO. CHRINEERING STUD COOLANT, RATIO DRY HAMFERING STUD HOLES -/20 ROUGH OUT OL IMPROVEMENT FINISH OUT S 9,00 IN. PER MIN. STEED: 450 mm. 45 sm FEED: .005 HER TOOTH . 020 HER REV. _ C-8 C-8 C-8 C-8 TOOL MATERIAL (GRADE, TYPE) 4060 2560 2180 2050 (MONTHLY SCHEDULE) + (4) . . 511 409 480 116 (6) MINUTES PER GRIND (INCL. RESET) (7) MINUTES PER TOOL CHANGE, RET-UP, ADJUSTMENT (8) TOTAL SET-UP TIME PER TOOL (3) X (7) . . . (9) MINUTES PER TOOL TIME DUE TO 1.5 1.5 1.5 20 38.7 /36.3 160.0 170.0 CHANGING TOOLS (8) x (8) + 60 . . . 109 1 09 109 10 10 10 1 00 2 90 2 90 2 90 8 1481 90 8 336 40 8 1186 10 1 /392 00 (17) ESTIMATED MONTHLY TOOL COST (5) x (15) . METALLURGICAL ASPECTS OK __ DISTRIBUTION RECOMMENDATIONS AND REMARKS 1ST PREFERENCE VENDOR GENERAL STORES GENERAL STORES MFG. ENG. DEPT. (PLANT) MFG. ENG. DEPT. (BINISION) MFG. ENG. OFFICE (STAFF) DESIGN & STANDARDS BEPT. MFG. RESEARCH BEPT.

A Tool tests are carefully evaluated, with detailed comparisons of performance and estimated monthly tool cost. Two copies of this report go to Purchasing, and two to the Design & Standards Department, one copy each to General Stores, Plant Mfg. Eng., Division Mfg. Eng., and Mfg. Research.

SEE FORM 3783A FOR TOOL PERFORMANCE RECORD. SEE FORM 3783B FOR YESTING METHODS INSTRUCTION

GEN. FOREMAN OR SUPT.

MFG ENGE 3783

B Test data is compiled on cards. Duplicate records are kept on file in the department concerned and in the tool research files.

DAYE	FORD MOTOR EVALUATION OF TO TOOL PERFORM	OL PERFORMANCE	(PLANT) TEST NO.		
OOL NAME, DESCRIPTION			OPERATION		
PART NAME, NO.			OPERATION NO.		
MACHINE NAME, NO.			COOLANT, RATIO		
DEPTH OF CUTSPEED:RPM	SFMFEED	PER TOOTH.	PER REVIN. PE	R MIN.	
TOOL IDENTIFICATION	PRESENT TOOL (A)	VENDOR (B)	VENDOR (C)	VENDOR (D)	
RANGE OF PIECES PER GRIND.					
RANGE OF WEAR LANDS					
AVERAGE SIZE OF WEAR LANDS					
NUMBER OF TOOLS TESTED					
NUMBER OF CHIPPED OR BROKEN TOOLS	1				
AVERAGE NUMBER OF PIECES PER GRIND					
TOTAL REGRINDS PER TOOL (ACTUAL/EST.)					
MINUTES PER REGRIND (INCL. RESET)					
MINL PER TOOL CHANGE, SET-UP, ADJUSTMENT				B	

coordinates the tooling in all plants in the division.

This group devotes its full time to particular types of tools for which it is responsible. It keeps constantly posted on latest developments in its field by close contact with engineers employed by tool manufac-turers, perusal of manufacturers' catalogs and other literature, study of technical and production magazines, visits to technical schools and to plants of other manufacturers, and active participation in technical societies. It is called to help on especially difficult tooling problems and it is constantly making studies and tests to insure the use of tools which will yield the lowest possible unit cost and will contribute to quality of the product.

Tool analysts deal with all types of cutting tools, abrasives, portable power tools and hand tools.

A comparatively recent development is the installation of tool control boards on automatic machines to indicate when tools should be changed and to expedite the changes. From these controls a daily tool life report can be made to record the performance of each tool. Analysis of such reports indicate the efficiency of the tool's performance on the production operation.

Seeking Best Performance

Ford tool analysts don't take anything for granted. They believe in thorough testing and in using only those items which are proved to be best in each application. They are usually busy on assignments, searching out and eliminating causes of excessive tool costs or testing new products and ideas, but they are always available for special tests and studies.

Any department which desires a test on production tools other than regular design, material or heat treat, may obtain one by making such a request through proper channels. General foremen who watch their tool costs closely by keeping records of tool usage are quick to call for tests when they find tool usage on a given operation becoming excessive

Vendors are well acquainted with the practice and many requests are received for comparative tests. In fact, if Ford tested every product which the vendors ask to have tested, a larger group of tool analysts could be kept busy doing this alone. As it is, the purchasing men and the technical men are always willing to give a fair hearing to any vendor who claims that he has a better product or a better price, and

order a comparison test of his product when warranted.

Tests are conducted by tool analysts, with the active assistance of interested departments. Tests are run on regular production equipment to determine the true performance characteristics of tool. Accuracy is required to assure fairness. A manual of perishable tool control practices gives full instructions for conducting such tests. When tools having special features are tested, the regular tool must be tested also unless results of recent tests of the latter are available. Tools are placed on test through the general foreman of the department concerned.

Using Test Data

Test data is compiled on cards. Duplicate cards are kept on file in the department and in the tool research files. When a test is completed, data compiled on the cards is summarized and a report of results is distributed to all departments concerned. This is essentially a tool cost analysis based on the evaluation of tool performance.

Two copies of the report go to Purchasing. There the most important data—the number of pieces per grind, pieces per tool, total tool cost per piece, recommendations and other pertinent information—is transcribed to stiff paper purchase record cards which are kept on file for the purchasing men's reference in making future commitments. These cards are $5^{\prime\prime}$ x $8^{\prime\prime}$ and are ruled on both sides to hold a record of forty tests. The report form provides spaces for first preference and second preference, recommendations, and remarks. Such a report may list the first preference as vendor A and second preference, vendor B or C. Or it may recommend a change of metallurgical aspects or a change in design of the tool.

Such tests not only are an invaluable aid to the purchasing men but they also answer questions which might otherwise arise. A vendor, for example, can be quickly shown a report of how his tool compared with others in an actual test.

Of course, approved production tools may sometimes fail to maintain their usual good performance. In such case, the vendor is notified promptly and he sends one of his engineers to investigate the case. Such a failure usually is a temporary one, the vendor agrees to an adjustment, he corrects the cause of the failure, and the case is closed.

(Please turn to page 272)

87 7100 12-53 TOO	L CONTRO	DL REPORT	4237
Crib No	Dept	Opr. No	
Amount:	Part No),	
Date	Tool No)	
Signature:			
REASON	AMOUNT	CAUSE	AMOUN
BROKEN		HARD STOCK	
DAMAGED		ACCIDENT	
WORN OUT		NORMAL WEAR	
LOST		CARELESSNESS	
OK TO GRIND		OK TO USE	
SALVAGE		SALVAGE	C
		2nd INSPECTION	

C Important information is provided by the day to day tool control reports from shop operations.

	00.DSM 100.	FIRM	AMT. ORDERÆD	PRICE	B. P. DATE	PUBCHASE NOTICE NO.	DETAILS
		Tool Test 28	-20-54				
30	1700	Tool-Grade-Type	Pos.	Per Grind	Per	Per Too	Total Cost Per
200000		XXXXXXX		161		966	-0114
200000		XXXXXXX		155		930	.0118
XXXXXX	K	XXXXXXX		181		1086	.0101
XXXXXX	K.	XXXXXX		135		810	.0135
			1	at Prefere	nce XX	DOOL	
				nd Prefere		TOX	
						1	

- D Results of tool research and testing are reflected in the purchase record, which shows first and second preference for every tool requirement.
- E Specifications are as carefully drawn—and revised—for perishable tools as for production material.

EM DESCRIPTION			FORD IDENTIFICA	TION NUMBER		
		MO. TO BE ASSIGNED BY STORES ACT. NO. ASSIGNED BY SPBC. ACT.			DATE HOUSE	
JSED FOR (PART NO. OR NAM)	SPECIFYING ACTIVITY E OF MACHINE OR EQUIPMENT)	REGMTS.	QUANTITIES	AUTHO	RIZII 3 ACT	QUANTITIES
		ACTUAL SET-UP			FLOAT	
MACHINE SERIAL NUMBER	FORD BRASS TAG NUMBER	INITIAL COMPLE- MENT		REQ'D. DEL DATE	30 - DAY	
END USE (IF OTHER THAN ABOYE)			USING DEPT. NO.	AUTH. DEFT. NO.	EXPENSE PURCHASE ITEM	
				SIGNATURE		
SUPERSEDES			EFFECTIVE DATE	•		
SPEC. DEPT. NO. SIGNATU	RE					

Purchasing Department Files

By Paul F. Stolpman, Assistant Purchasing Agent, Texas Gas Transmission Corp., Owensboro, Ky.

PURCHASING AGENT can possibly remember all the significant details connected with the day-to-day processing of purchase requisitions, requests for quotation, purchase orders, scrap and obsolete disposal orders, contracts, correspondence, etc. Therefore it is essential that a comprehensive Purchasing Department filing system be maintained—one that offers the greatest utility to the department.

A means of reaching this end is to establish a flow chart of departmental forms and correspondence, and to draft a definite policy to govern the filing of forms, suppliers' literature, correspondence reading files, etc. Both take considerable study to perfect a worth while system, but in the end the Purchasing Department will be a better one for its efforts.

Filing is often thought of as a routine task, and in many cases the file clerk is the department's lowest ranking job classification. This unfortunately, at times, results in haphazard attitude and performance on the part of the file clerk, and the neglect, by those in authority, of the tremendous value of maintaining first-class files.

Alphabetic-or Numeric?

Yet any serious consideration permits you no alternative but to recognize that files are the backbone of a Purchasing Department. Consequently, it is wise to give them close attention, and to impress those entrusted with filing duties as to the important part good files contribute to the over-all success of the department.

The filing of numbered forms (particularly purchase orders) im-

mediately presents the problem of whether to file the records numerically or alphabetically. Each system has its pros and cons. The general rule is to file them according to the system by which reference is most frequently made.

We have found it most desirable to file open purchase orders alphabetically by vendors' names, for the simple reason that the commodities ordered therein are invariably associated with specific vendors and vice versa. This is probably true in most purchasing departments of relatively small size.

The alphabetical file permits ready access to the required open purchase order without the necessity of first referring to a numerical cross-reference copy or a purchase order register. It also gives the expediting section the advantage of expediting all orders placed on a given company with a minimum of effort.

The numerical filing system predominates in respect to closed orders. These "past history" records accumulate rapidly and in large volume, and reference is relatively infrequent. Numerical filing gives added convenience in transferring and/or destroying files on a periodic basis. It is definitely easier to transfer the contents of a cabinet of numerically filed orders than it would be to select the older records of each of the alphabetical categories. When it is desired to transfer old purchase order records to storage, the numerical system not only affords the convenience of lifting the complete contents of one file drawer into a storage container, but it also gives a definite means of determining if any of the records are missing. Granted, this

could be done with the alphabetical system, but it would take weeks of cross-reference and verifying, whereas the numerical system would take but minutes.

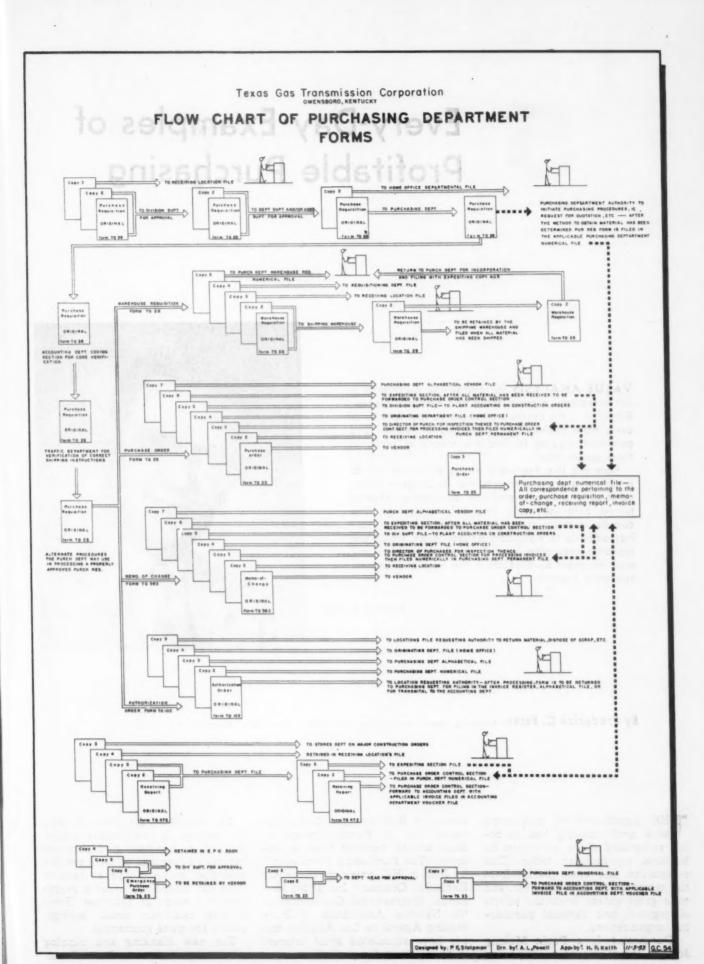
Cross Reference

Adequate cross reference is the key to the usefulness of all Purchasing Department filing systems. This is best exemplified by the commodity file, where manufacturers' literature and other information applicable to the company's material requirements is filed. The commodity file is customarily arranged alphabetically by commodity, since this is the usual manner of reference. On the other hand, the catalog file, which is closely related to it, is better suited to an alphabetical sequence by manufacturer's name, since that is the way catalogs are identified.

Filing by commodity name requires standard nomenclature, and some decisions have to be made. For instance should electrical wire be filed under "E" or "W"? The answer usually lies in the usage of an item in a particular company. Once the classifications are established, familiarity with the system quickly overcomes the original difficulty. It is useful, too, to assign an identifying number to each class of commodities. There may be as few as 25 categories, or the number may run to 500 or more, subject to the requirements of the particular company. For example:

Asbestos		(1)
Electrical	Fittings	(19)
Electrical	Lighting	(20)
Electrical	Misc.	(21)
Electrical	Wire	(22)
Engines		(30)

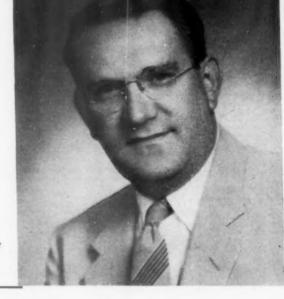
(Please turn to page 284)



5 Every-Day Examples of Profitable Purchasing

VALUE ANALYSIS for cost-saving purchasing is not necessarily a complicated and dramatic process. Rather, it is the constant alertness for possibilities of using more economical materials and methods and persistent digging to find the means of realizing those possibilities.

Here are five every-day examples of the sort of problems and requirements that crop up in every purchasing program, and how purchasing initiative turned potential waste into definite savings. The cumulative result of relatively small individual savings adds up to significant annual totals, which are repeated year after year. In most cases, there are also important by-products in the way of improved operating practice.



Frederick C. Esser

By Frederick C. Esser, Purchasing Agent, Lamp Division, Westinghouse Electric Corp., Bloomfield, N.J.

HE significance of purchasing as a profit making tool is being recognized more and more by business management today. This recognition has come partly from the tempo of modern business, and to a great extent from the efforts of regional and national purchasing organizations.

"Purchasing Is a Profit Making Job" is the theme of a continuing series of Westinghouse Lamp Division ads in Fortune magazine. Built around excerpts from an address, "The Purchasing Revolution," by John A. Hill, president of the Air Reduction Company, Inc. at the 38th annual International Convention of the National Association of Purchasing Agents in Los Angeles, the ads have stimulated great interest in "purchasing for profit."

To illustrate the profit-making (or savings, if you prefer) opportunities a purchasing department can take advantage of, here are five examples we've picked at random from our files. They cover a representative range of activities. Some involve relatively small savings; others are quite substantial.

The new blanking and cupping presses installed in our Paris, Texas,



Group discussion is a fruitful way of developing costsaving ideas, and Westinghouse has found it good practice to keep its buyers raminded of their responsibilities in this direction. Shown here discussing a purchasing problem are F. C. Esser, Purchasing Agent; O. A. Rector, Assistant Purchasing Agent; J. W. Allen, Manufacturing Engineer; J. J. Donnelly, Supervisory Buyer; F. L. Brooks, Assistant Buyer; P. E. Murphy, Supervisory Buyer.

plant produced lamp base shells so rapidly that quick disposal of scrap material was necessary. Supervisory Buyer Joseph J. Donnelley reviewed the problem with Ralph Adams, Plant Manager.

Baler Adds Value to Metal Scrap

Back in Bloomfield, N. J., Joe assigned Assistant Buyer Frank Brooks to the job of locating suitable scrap handling equipment. Brooks visited the Consolidated Baling Machine Company in New York to find out about their equipment and visited several plants using it. At the Westinghouse Meter Division in Newark, N. J., he found a baling problem almost identical with

the one in the Paris, Texas plant.

He found also that one of the chief considerations was the higher resale value of aluminum scrap properly baled for the mill. O. A. Rector, Assistant Purchasing Agent, assigned a man to work with Frank Brooks to see that mill specifications of the baled scrap were met. Through the co-operation of everyone along the line-and a relatively inexpensive piece of baling equipment-an annual saving of \$2,350 was made because baled scrap brings a better price at the mill than loose scrap. In addition, baling and removing scrap made for a neater, more efficient operation at the Texas plant.

More Economical Methods of Fabricating Parts

Joe Donnelley's mechanical back-ground makes him alert for cost-cutting corners. He and Jack Allen, manufacturing engineer, wanted to find a cheaper way to manufacture some of our Lamp Division parts. A sealing spindle made of seamless steel tubing had been centered, turned and ground. Joe suggested using a centerless grinder to eliminate two steps in this operation. Resultant savings: \$192 annually.

In another instance, a suggestion that we buy bulb support discs from a short run stamping house instead of making them from costly tools in

This scrap baler is paying off at the rate of \$2,350 per year in increased value of properly prepared scrap metal. Watching the operation are Plant Manager R. A. Adams and E. Polhemus.



Centerless grinding eliminated two steps in the manufacture of sealing spindles. Messrs. Allen and Donnelly are wearing a \$192 cost-saving smile.





Dip coating of anode hooks saved \$1.85 in cost per unit and six weeks of urgent delivery time. Messrs. Murphy and Brooks were the purchasing men directly responsible for adoption of this method.

our own plant resulted in a saving of \$246 yearly.

Cost of Anode Hooks Cut By 60%

During the Korean war, we had to find a substitute for pure nickel wire in our lamps. Engineering found that nickel plated iron wire worked as well as pure nickel wire. In 1951 we wanted to get a plating tank into operation on short notice to plate iron wire. The Wire Division found they didn't have enough anode hooks to start their run. We found some monel hooks at \$3.25 each but couldn't get delivery for at least six weeks.

Frank Brooks, our Assistant Buyer, found some Hex Monel, brought it to a small welding shop and had the hooks shaped by hand. Specifications called for the hooks to be coated with rubber. Frank learned through several supply houses that the rubber coating could be done by dipping the hooks into a synthetic solution costing \$4.95 per gallon. The entire cost of the hooks, including forming and coating, was thus brought down to \$1.40 each compared with the \$3.25 we had been quoted on hooks we couldn't get for at least six weeks. The substitute hooks worked just as well as the regular ones we had been using.

For many years, we had been buying a combination of sulphuric and nitric acids in drums for bright dipping brass shells used for making lamp bases. We use a lot of acid and it took a lot of labor to handle and store returnable drums, to say nothing of the space they took and the safety hazard their handling presented. Paul Murphy, Supervisory Buyer, dug into the possibilities of bulk storage for acid.

Bulk Buying and Storage Reduces Material Costs

He found the cost of a storage tank was reasonably low and that acid delivered in bulk, either by tank car or tank truck, was far less expensive than when delivered in drums. Because of his thoroughness in researching this job, we are now buying acid in car and truck lots and having it delivered to our own storage tanks—at a saving of about \$7,500 annually.

Changed Specifications Bring Cheaper, Better Product

During the critical metal shortages attending the Korean war, it was first thought we had to use nickel-plated pure iron wire of the lowest carbon content. During those days, low carbon wire with a maximum carbon content of .04% (which we were using) was available only at premium prices.

Paul Murphy pointed out that wire of this specification did not have the bending qualities we needed unless it was further processed. It was his contention that wire with a higher carbon content could be used, thus eliminating the extra processing step and getting us out of the premium price range for wire.

Samples of standard low carbon steel wire with maximum carbon content of .06% were tested, proved completely successful and we were able to eliminate the high-priced low carbon iron wire entirely. Result: a saving of \$16,000 annually.

Profits Made—or Wasted

True, none of these examples is quite as dramatic as the displacement of the kerosene lamp by the incandescent light bulb. Nor are any accompanied by as much fanfare as a terrific sales campaign or a spectacular new product development. In fact, there is none of the outward shimmer of the spectacular in most of what the Purchasing Department does. But when the cost analysts get out their pencils at the end of the year, the true worth of the Purchasing Department as a Profit-Making-or Profit-Wasting-branch of industry becomes apparent.

There are still unexplored fields of profit-saving in the purchasing departments of nearly every company. But to reap their treasure will take the kind of thorough, sometimes monotonous, rarely glamorous and always painstaking detective work we've described in the instances cited above.

When a Third Party Guarantees Payment

By Albert Woodruff Gray

A SUBCONTRACT for material and equipment under a contract for grading and the installation of concrete work in the construction of a parking lot at Ft. Eustis, Virginia, was let to a contractor of doubtful credit.

The materialman to whom the subcontractor applied for credit said he could have no material "unless the general contractor signed for it." The following day a telephone message to this materialman from the general contractor was, "We'll be responsible for this subcontractor's bill."

On this assurance, material and equipment were supplied until the unpaid balance was \$1,796, when suit was brought against the general contracting firm to recover on this promise.

Old Precedent Confirmed

A statute was enacted in England nearly three hundred years ago which provides, "No action shall be brought whereby to charge a person upon any special promise to answer for the debt, default or miscarriage of another unless the arrangement upon which such action shall be brought or some memorandum or note thereof shall be in writing and signed by the party to be charged therewith or some other person thereto by him lawfully authorized."

That ancient statute has been the pattern for similar statutes throughout this country. In Virginia the statute embodying the provisions of this English law is in part, "No action shall be brought to charge any person upon a promise to answer for the debt, default or misdoings of another unless the promise be in writing and signed by the party to be charged."

The general contractor interposed this statute in its defense to the action by this materialman. The court held the telephoned assurance of the general contractor that it would be responsible for the bill of the subcontractor not to be enforceable, and that the materialman could not recover in this suit. Its decision was:

"The holding in this jurisdiction and in a majority of others is that if the original contractor—subcontractor in this instance—remains liable and the undertaking of the other party is merely that of surety or guarantor, the undertaking is void under that statute."

Basis of Credit

Often however the situation is not as simple in the application of this famous statute to promises of this character. The president of a hosiery mill agreed with a raw material manufacturer that he would take the entire output of the factory. He asked that the shipments be billed his company but that copies of the invoices be sent him personally, saying that he wanted the goods for his own personal use and would see that the manufacturer was paid.

In deciding the litigation that subsequently occurred, whether the president of this hosiery mill was responsible for this raw material as a guarantor of payment by the hosiery mill (in which event no recovery could be awarded as the promise was not in writing), or whether the goods had been sold to him personally, the court made a distinction that has frequently been relied upon in cases of this character.

"If a debt has already been made and the party is already bound under it, and a third party goes in and promises to pay it or assume the responsibility for it, the third party isn't liable there because the credit wasn't extended on the basis of that promise, and that is the promise to answer for the debt, default or miscarriage of someone else, which is to be in writing before it can be enforced.

"But if the person goes before the credit is extended and says to another, 'If you will give this credit to thus and so, I'll see that it is paid,' that promise on his part to see that it is paid constitutes an original obligation on the person making the promise, and whatever credit is extended by virtue of that promise becomes binding on him because his promise to see that it is paid makes him responsible for it.

"If, for instance," continued the court in holding the president of this mill personally liable, "two persons come into a store and one buys and the other, to gain him credit, promises the seller, 'If he does not pay

you, I will,' that is a collateral undertaking and must be in writing. But if he says, 'Let him have the goods and I will pay,' or, 'I will see you paid,' a credit is given to him alone. He is himself the buyer and the undertaking is original."

Primary Liability

A West Virginia coal company was heavily indebted to a hardware firm, and the president of the coal company assured this creditor that he would be personally responsible for the payment of all purchases made by the coal company. On this assurance, the hardware company continued selling the coal company until the latter became bankrupt. Then the hardware company looked to the president of this bankrupt company for payment.

In the suit brought on this oral agreement, the court held that the promise of the president of the coal fraud in establishing a liability or the false extension of conversations between the parties so as to make them impose obligations beyond their real scope.

"That some benefit accrues to the person making the promise for the service rendered or the property sold and delivered to such third person, does not necessarily make the debt that of the one guaranteeing payment.

"If the debt is that of another and not of the one making the promise, the terms of the statute include it, and the incidental benefit accruing to the person making the promise cannot exclude it.

"If, on the other hand, the debt is that of the person making the promise, the promise is not one to which the statute applies, though a third person may be incidentally relieved of an obligation in consequence of payment. but to subserve some pecuniary or business purpose of his own, involving either a benefit to himself or damage to the other contracting party, his promise is not within the statute although it may be in form a promise to pay the debt of another and although the performance of it may incidentally have the effect of extinguishing that liability."

Direct Promise Is Binding

The phrase that usually evokes this statute that the promise to answer for the debt of another must be in writing, in the defense of actions on purchase contracts, is essentially. "I'll see you paid."

An incident in which this "I'll see you paid" was held by the court to be a direct promise and not a promise that this statute requires to be in writing to be enforceable, arose in the installation of a gas system in Pennsylvania.

An engineering firm hired a sub-contractor for the trench digging and pipe laying. When a third of the work had been done and nothing paid the subcontractor, he stopped work and told the firm financing the installation of this system that he would do no more under this contract until he was paid. As a consequence, the financing firm assured him that if he would complete his contract they would pay him not only for the work still to be done but also that which had already been performed.

Affirming a judgment in favor of the subcontractor in the suit brought against this financing firm, the court said in reference to this statute as a defense in this case:

"These words have no such certain, fixed meaning that the court would say as a matter of law that they necessarily import the one kind of obligation rather than the other. It is folly to urge that there was not an original undertaking on the part of those financing this undertaking. The work was furnished on the credit of these financiers and the undertaking was not to pay the debt of another, for without their promise the work would never have been performed."

Determine the Intent

The major difficulty in the application of this statute is in distinguishing between a promise that guarantees the payment of the debt of another and a promise that is the direct obligation of the one making it, as in this West Virginia de-

(Please turn to page 292)

REFERENCES

1950. Code of Virginia, sec. 11-2(4)

Lawson v. States Construction Co., 69 S.E.2d 450, Virginia

Goldsmith v. Erwin, 183 Fed. 2d 432

Hurst Hardware Co. v. Goodman, 69 S.E. 898, West Virginia

Corcoran v. Huey, 80 Atl. 879, Pennsylvania

Farmers Federation, Inc. v. Morris, 27 S.E. 2d 80, North Carolina

Davis v. Patrick, 141 U.S. 479

company that he would be personally responsible for these purchases was the promise to answer for the debt of another which, to be enforceable under this statute, should have been in writing.

"The purpose of the statute," said the West Virginia court, "is to prevent the establishment of claims by oral testimony when the situation of the parties is such as to constitute a strong motive for perjury and "The test to be applied in every case is whether the party sought to be charged is the principal debtor, primarily liable, or whether he is only liable in case of the default of the third person."

To this the court added a quotation from an earlier decision in that state:

"Whenever the main purpose and object of the person making the promise is not to answer for another



A unique way of meeting

THE CHRISTMAS GIFT PROBLEM

THE Christmas spirit, like many other of the pleasant things in life, can be abused. Nobody knows this better than purchasing agents. For many of them, if they are conscientious about the ethics of their job, the season brings a gratuitous headache in the problem of handling gifts from vendors—a persistent practice that is quite generally frowned upon in buying circles, however well-intentioned it may be.

Many, if not most, companies have a policy-written or understoodagainst the acceptance of such gifts. Obviously the best way to achieve compliance with that policy is to make it known to suppliers before the gift is sent and before it becomes a specific issue. This is not always easy to do in a good natured way that makes it clear that the policy means what it says while still retaining the cordial relationship a gift implies. It is easy to get stuffy or arbitrary in a formal notice. It is easy to offend the cheerful giver, whatever his motive. You can live up to your own ethical convictions, but you are on dangerous ground in prescribing an ethical code for

W. R. Uloz, Purchasing Agent of The Cleveland Pneumatic Tool Company, has hit upon a unique method of handling the problem this year. It has many features to commend it. It affords him the opportunity to express his own greetings of the season. It is tempered with humor. It capitalizes on the current fad for prize contests. It

invites active "audience participation"—the best way to get compliance. It starts early, and provides for two additional follow-ups.

Cleveland Pneumatic's plan consists of a series of three form letters. The first one was mailed on September 15th to a list of about 1,500 vendors. It said:

Every one likes contests. Here is an opportunity to participate in one I know you'll enjoy. Your answers will solve a problem which has been the despair of all purchasing people since the first salesman called on the first buying agent.

All I request from you is an essay telling in as many or few words as you choose, why you have decided to eliminate all appreciation tokens at the Christmas season.

I'm sure you will have no problem in composing your essay. However, in all contests an example is usually given. I'll not be the one to change the rules. You might start off as follows:

"99.99% of purchasing people are equipped with a brain and because they are intelligent (?) we know that gifts of any type presented to them at the festive season or any other time are a great embarrassment to them. The purchasing agent is a man with great 'humility', quote Mr. A. Godfrey, and further quoting Mr. A. G. 'when a man loses humility he has lost all'. Please help us to preserve our humility."

The above example cannot be used because it may disqualify you for the grand prize.

Oh yes, the prize for the winning essay and the next 1,000 letters will be as follows:

1. My unending appreciation.

2. My sincere respect.

3. A lasting and warm friendship.
Thank you for your ever ready cooperation.

Very truly yours,
The Cleveland Pneumatic
Tool Company
W. R. Uloz, Purchasing Agent

The second letter was mailed on October 15th, acknowledging the receipt of replies to the first announcement:

Your wonderful cooperation in participating in our contest is greatly appreciated.

The essays received indicate considerable thought and planning. I'm grateful for your ideas as they also express my thoughts.

In a very short time I will advise you the winner of this contest.

Thank you for your sincerity.

Very truly yours,

The Cleveland Pneumatic

Tool Company

W. R. Uloz, Purchasing Agent

The third and final communication was dated November 15th. It was sent to all respondents.

Congratulations! Your letter has been chosen as the best written and it will be passed on to all purchasing organizations and sales groups as an example of the close relationship between vendor and without the benefit of gratuities.

You and other people like yourself with your straight and honest thinking will remove the source of irritation which all people in our profession have been combating.

Thank you for a job well done.

Very truly yours,
The Cleveland Pneumatic
Tool Company
W. R. Uloz, Purchasing Agent

Pictorial Pointers on Plant Safety

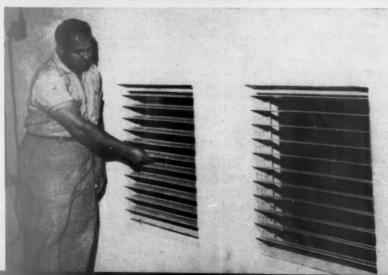
A safe plant or stockroom means lower warehouse costs,

better protection for merchandise, greater employee
efficiency, shaved insurance rates, and reduced liability

for personal injury to workers

Keep trash and rubbish in suitable containers, preferably outside the warehouse, to minimize danger from fire and eliminate the hazard of tripping over it.







Non-slip surfaces for stair treads and upper storage flooring give workers sure footing under all circumstances, even where greasy liquids are apt to spill.

By David Markstein

Louvered openings in warehouse walls provide natural ventilation—fresh air for workers, less dampness on merchandise, less danger from fume concentration.



Above, powered equipment for materials handling avoids strains and accidents in heavy lifting operations, as well as handling the merchandise more safely.

Below, design storage bins for easy and safe access, to avoid unnecessary rehandling and lifting to get at needed stock.



Put up warning signs calling attention to permanent or temporary hazards; they cost little to make, and may save some bad spills.





Above, off-the-floor storage protects merchandise from accumulated moisture and dirt, makes floor cleaning easier, helps to foil rats and other pests.

Below, build up flooring along the walls, with a curved surface to avoid dirt-catching corners, protect wall surfaces from staining, and permit full mopping-up.



Set and enforce speed limits on factory and warehouse trucks; they rarely run over workers, but frequently sideswipe merchandise when taking corners too sharply and too fast.



Industry and Trade Statistics to be Brought up to Date

Business decisions can be made most intelligently when there is a sound background of fact available . . . Congress has charged the Bureau of the Census with making periodic studies of American industry and trade . . . In some fields the present information is as much as 15 years old . . . The Bureau is now preparing to

bring this up to date with surveys based on 1954 operations . . . How promptly this new information can be compiled, published, and put to useful work depends on the cooperation of business men in responding to the Bureau's inquiries . . . You will receive your report forms early in 1955; a speedy reply will help.

An interview with Dr. Robert W. Burgess, Director, Bureau of the Census

Dr. Burgess, you were with the Western Electric Company for many years before becoming Director of the Bureau of the Census. Since you have worked on both sides of the street, so to speak, what can you say about the services of the Census Bureau that is of interest and importance to the readers of PURCHASING Magazine?

My work with Western Electric as statistician and economist over a period of a quarter of a century kept me in close association with our purchasing department. We worked together on various phases of the problems of supply, demand, and prices connected with materials used in our manufacturing operations, such as copper, lead, cotton, and other items, and finished products bought by the company for the Bell System.

How did you use Census figures at Western Electric?

In one way and another, Western Electric made and still makes use of all branches of Census information. We used population projections as one basis for estimating "normal" increase in industrial production. We used statistics on production of various classes of products to compare with the company's own production of those classes. The distribution of the population by income classes was important on some of our problems.

Then, as a business man of long experience, you think Census statistics are useful to business men?

That is correct, Mr. Wecksler. Statistics are important to the operation of any business. When busi-

ness and industrial enterprises have to make decisions on today's and tomorrow's problems, they have to make use of various underlying facts. How large is the prospective market? How much competition will be met from concerns making the same products? Will necessary materials and component supplies be available? Is there a good supply of workers, engineers, and salesmen? Many of the important facts needed to deal with such questions are provided by the various periodic censuses conducted by the Bureau of the Census.

What's new in the Census field now?

Early in 1955, the Census Bueau will conduct its censuses of Business, Manufactures, and Mineral Industries. The legislation providing for these censuses, which will cover business operations for the year 1954, is Public Law 671 of the 80th Congress and Public Law 411 of the 83rd Congress, providing for the collection of business statistics at 5-year intervals.

Did you consult with business men about these censuses?

Yes. Conferences were conducted between representatives of the Census Bureau and other governmental agencies, and business men representing trade associations and individual business concerns. Hundreds of trade associations and thousands of individual companies cooperated with the Bureau in reviewing and clearing inquiries and lists of items such as, for instance, more than 6,000 individual subclasses of products of industry which will be included in the scope of the Census of Manufactures. Similarly, inquiries and items to be included in the report forms for the Censuses of Business and Mineral Industries



PURCHASING's Washington editor discusses the forthcoming Censuses of Manufacturing, Business, and Mineral Industries with Dr. Burgess, against the background of the Univac electronic computers which will be used in translating individual reports into comprehensive statistical form.

By A. N. Wecksler, Washington Editor

were cleared through governmental and industry review. The Census Bureau received and adopted helpful suggestions from business leaders to design the requests for information so that answers will be available from regularly maintained records in the great majority of business concerns.

What will the Census of Manufactures cover?

The Census of Manufactures will collect information about an estimated 275,000 factories. The common inquiries for all industrial establishments will include plant identification, kind of industry, employment, payrolls, hours of work, cost of materials consumed, power equipment, water consumption, and value of products shipped. Product and materials inquiries will vary according to the kind of industry.

What will the Census of Mineral Industries cover?

It provides for an enumeration of approximately 35,000 mines, quarries, and oil and natural gas establishments. This census will collect data, for the first time since 1939, on the number, size, location, and character of operations in the mineral industries, as well as data on number of workers, value of products, principal expenses (wages, salaries, cost of supplies, fuel, electric energy, and contract work), expenditures for plant and equipment, quantities of fuel and electric energy consumed, and horsepower of power equipment installed.

What's the story on the Business Census?

The Census of Business will cover approximately 3,000,000 retail, wholesale, and service establishments, theaters and other amusement places, hotels and

tourist courts. Inquiries to be made will include location, kind of business, corporate relations, employments and payrolls, operating expenses, inventories, total annual sales and credit sales. As in the case of the Census of Manufactures, report forms will be adapted to the several kinds of business, and the smaller firms will be required to answer a minimum of basic inquiries.

Do you have any special point you would like to make about the collection of this information?

That I do, Mr. Wecksler. While the Census Bureau is charged with collecting the data required in the Censuses of Industry and Trade, a good job cannot be done without the cooperation of all business men who are called upon to report the facts about their businesses. The value of the censuses depends largely upon prompt and accurate reporting by business, and speedy compilation and publication of the results by the Census Bureau.

Business men will be asked to file their reports within 30 days after they receive their reporting form. A message from the Secretary of Commerce, which will accompany the reporting forms, points out that the Bureau is dependent upon speedy and accurate reports by business men to enable it to carry out its program for earliest possible publication of the statistical information to be based on their reports.

Thus the Census Bureau and the American business man jointly share the responsibility for making available, to the nation at large, timely and important statistical data on industrial and business activity.

Buying Machine Tools

By Henry T. Coates

THE AUTHOR has had wide experience in engineering and purchasing. He is a past president of the Purchasing Agents Association of New York, and is currently engaged in consulting work on industrial engineering, purchasing and marketing problems.

ACHINE TOOL buying is something of a step-child in many purchasing departments. The probable reason for this is that the annual expenditure of money involved may be relatively small, though the time, knowledge and skill required may be large.

A company with annual purchases of \$5 million may spend as little as \$10,000 to \$20,000 a year on machine tools-less than 1/2 of 1% of the total spent by the purchasing agent. If we divide his time on this basis, he could afford to spend only three or four hours a year on it. Obviously, little could be done in that time on a subject that requires experience and a great deal of effort. It seems like small potatoes to a man spending millions of dollars for raw materials and supplies to keep production going. Yet it is very important.

This discussion is restricted to basic machine tools, which might be roughly defined as metal cutting, chip producing, power driven tools such as lathes, planers, shapers, milling machines, drilling machines, etc., plus general purpose presses of the types used in the machine shop, and grinders. Tools strictly for production line use, or designed for a particular industry, are in another category. In some companies,

machines as defined would be used only in the tool or repair shop, but in many companies they would be found on production lines as well.

You can't buy machine tools by the pound, though the weight may have a little to do with the value. Price may be a relatively small part of the consideration, yet must be considered. Quality, as gauged by neatness of fits and good workmanship, is a factor, but when buying from first class companies this can be counted on.

The importance of this sort of equipment is far out of proportion to the dollars spent for it. Neglect in procurement can lead to considerable waste-not so much in capital expenditures as in loss of earnings caused by extra labor costs. Its procurement involves purchasing facilities, of course, but also the use of other departments to collect the important detailed information for a satisfactory purchase is essential. The Purchasing Department is better organized than any other for seeing salesmen, and usually has the best and most complete catalog file. It also has the most experience in selecting vendors and negotiating prices and contracts. On the other hand, its shop contacts are often rather remote-on a correspondence basis rather than a visiting and conferring one.

Whose Responsibility?

Many purchasing agents avoid the responsibility of buying this type of equipment, and rely on the Engineering Department to line the whole thing up and pass along a requisition specifying everything, even to the make of the tool and the price. He may feel uncomfortable about this, but it's too small to raise a row about, and besides, he would not want the responsibility dumped in his lap without being able to count on other departments to furnish the details that only they can give. Yet it is a matter of pur-

chase, and it should definitely be under his control.

As for the engineer, he feels that the selection of machinery is part of his work, and when it comes to the large production items everyone agrees with him. But the small and infrequent demand for the shop type of machine, with which we are concerned, seems to him large enough for only cursory attention. Perhaps a machinist has complained to a foreman that his lathe is worn out, out of date, or otherwise unsuitable. The plant superintendent or other supervisor writes out a requisition, possibly inserting the name of the maker of the old tool or of one that some friend has mentioned, and sends it to the Engineering Department. There an engineer or clerk OK's it or changes the supplier's name to one that he prefers. He consults a catalog-possibly an old one-for specifications, and the requisition comes to Purchasing with "cut-and-dried" look. Here the buyer passes it to the order desk. and the purchase order goes out without question. Why pick an argument over such a small matter?

Now, engineers lean heavily toward precision and quality, and away from price. If you stop to think about it, the very nature of their work makes it necessary for them to be that way. Supposing they do specify a machine that costs \$1,000 more than another. "It will last 20 years—that's 25¢ extra per day. Peanuts, compared to the wages of the man who runs it, and the other machine would probably cost more in repairs, by several times the difference in price." Should a buyer argue with them?

This procedure can be satisfactory in some, organizations, where full cooperation exists, but there are objections to its general use. Is the Engineering Department set up to see salesmen? Certainly not the usual flood of them, without considerable screening—and this often

leads to oversights, unreasonable preferences or personal liking. Management would not like to see this department overrun by salesmen in what may be merely desultory conversation, keeping engineers and draftsmen from pressing work. So what often happens is that the engineer handling the requisition calls in a salesman from one of the well known makers of equipment, or perhaps a friend on whose judgment he relies. And that salesman's duty is to sell his own line.

Here's one recent example probably worse than is apt to occur, but nevertheless true. The Production Department sent a requisition to Engineering for replacement of a machine they had been using for many years in the tool shop, where they made dies, mandrels, arbors, etc., for use on machines in the production line. The engineer looked in a catalog and wrote the specifications, naming the maker. The purchasing agent sent the order to that firm, and received a reply that they did not make such a machine. Inquiry to other firms brought similar answer, until finally one agreed to fill the order. In due time the machine arrived, costing \$6,000.

When it was delivered, the Production Manager hit the ceiling. It was unsuitable and way out of date. He berated the Purchasing Agent, who pulled out the spec and put it up to Engineering. Higher officials were drawn into the ensuing row. It was found that the selection had been made from an old catalog. The firms who turned down the order did so because it was an obsolete type they had discontinued. The Production Manager knew what he wanted to produce on the machine, and took it for granted that Engineering would get him the latest model. As a result, they started all over again, calling in salesmen of several firms, and a machine of new design with labor saving features was purchased for \$14,000more than twice as expensive, but saving enough to pay its entire cost in a few months.

Shop Information

The need for a new machine tool arises in the shop. The production people and operators are the ones that know what has to be done on it and, in most cases, the best way of doing it, though the analyzing ability of the engineer may have much to do with originating the idea. The purchasing agent may at times

A LOOK AT MACHINE TOOL REQUIREMENTS

I keep six honest serving men;
They taught me all I knew.
Their names are How? and When? and Where?
and What? and Why? and Who?

-Kipling

WHERE is there need for a new tool?

Usually the shop man knows this first and can give the best answer.

WHAT is to be made on it?

Again, the shop man has the detailed information, unless it is for a new project being developed by another department.

WHY is the new machine needed?

Probably (1) to replace worn out equipment, (2) to lower costs, (3) to gain more accuracy, or (4) to implement a new project. The answers must come from shop, production, or engineering.

Will it improve the operation of the company? Will it increase earnings or be advantageous in some other way? This calls for analysis and comparisons—functions of engineering and purchasing.

WHEN will it be needed?

Production or production planning have this answer, though the urgency may be initiated in the minds of the sales department or in top management.

WHO is to furnish the tools?

The purchasing agent is the one to make this decision, and has the responsibility of checking reliability of supplier and product, analyzing and negotiating price, and placing the order.

But in order to do this effectively, he must be sure that the previous questions have been answered adequately, and must be kept informed on all phases. This calls for close cooperation within the organization. Also, it requires that the salesman (primarily a Purchasing Department contact) be consulted on the various phases as may appear necessary or desirable. start the procedure by calling attention to a promising machine that he has noticed on the market, because he is closer to catalog changes and advertisements. He should be kept informed from the time the project is first being considered.

How much chance have the shop men to keep abreast of the latest improvements on the market? Like the Engineering Department, they must not be overrun by salesmen and they do not, as a rule, have a good catalog library. They are inventive, and can think how much faster or better a machine could do a job if it had a different kind of feed, bigger throat, longer travel, etc., and can ask others if there is such a machine available. They do get around to exhibitions and pick up information here and there. They also understand the value of labor saving as compared with capital expenditure.

Consider the Salesman

What about the equipment salesman? He is the fellow who has the best and latest information as to what is on the market, but can he get it to the right source? He knows that in most companies he should make his first contact with the Purchasing Department; in some companies he may be given to understand that he must not go to other departments. Then, if the purchasing agent is not fully informed on what is planned, the salesman receives courteous treatment but is told that no purchase of equipment is contemplated. "Come back next month." When he comes back next month, he finds that in the meantime a requisition has come through and his competitor got the order because he happened to be on the spot at the right time. Of course, such chances are inherent in selling, but if they can be minimized, there will be less time wasted in futile calls, more cooperation from vendors, and generally better value for the buyer.

A good salesman is always trying to find out who is the man who really knows "what and when," and his tendency is to call on anyone who might have the knowledge or influence. Many of these calls are wasted if the companies visited do not have a good rule of procedure and cooperation within the com-

pany.

There are salesmen who call on the purchasing agent only as a matter of courtesy or policy, on the presumption (sometimes warranted) that if they start somewhere else they are likely to be blocked for this reason alone when the purchasing agent gets the requisition. After this formality, they try engineering, production or executive office or they may get right down to the machine operator.

Of course you can't have salesmen running all over the plant, buttonholing every Tom, Dick and Harry. But on the other hand, you can't get the full benefit of the salesman's knowledge unless he finds out, or somebody tells him, what the actual shop problems are. Here's a true case for illustration.

A salesman had been making a lot of calls and was getting nowhere with a certain company. Out in the shop one day, he noticed a machinist making a complicated shaft having a number of sections of different radii, each section being connected to the next by a curved surface that had to be a blend of the two radii. It was being done on a regular engine lathe in lots of eleven, costing \$6,000 per lot. The salesman brought the Production Engineer to his company's show room, where there was a large tracer lathe on the power line. Their own machinist turned out the lot of eleven on this equipment at a cost of \$350. The machine would pay for itself many times over in a year, and a saving-or earningof several hundred percent on the investment is something to consider even if it is a small part of the total purchases.

Reduce Waste in Selling

Selling cost is increased by the number of calls that salesmen have to make to effect a sale, and selling cost has to be included in the selling price. If a large number of unnecessary calls are included in the selling process, the price of equipment, sooner or later, must rise. Conversely, if the number of calls can be reduced, there is a possibility of getting equipment at lower costs. It is therefor advantageous for those in purchasing to do whatever is reasonable to develop a routine that will save salesmen's time, make sales contacts more productive, and consequently save time and expense in their own company.

The picture presented here may seem overdrawn. So it is, for the many companies that have developed a good system. But there are many more companies, large and small, that are still sadly lacking in this respect. A method that gets the right salesman to the right man concerned with obtaining the equipment, with the least loss of time on either side, is well worth spending effort to develop.

Set Up a Procedure

It is generally agreed that the first call should be made on the Purchasing Department. The reasons need not be detailed here. There may be exceptions to this in some companies, depending on types of organization. But there are few cases in which the door beyond the Purchasing Department should be kept arbitrarily closed. More judiciously, the Purchasing Department should be the door and the guide. The reasons for this are shown in the accompanying table.

The system of one large company provides for the request for a tool to come from the plant to the purchasing agent, describing the type of tool wanted. The purchasing agent collects complete information from each firm in his "Approved List" that sells the type of equipment in question, gets prices, and sends all the papers to the plant authority. The latter calls in selected salesmen for consultation, and designates the machine he considers best for his purpose. The purchasing agent accepts this decision unless there is something in it that seems questionable to him. He consults with engineers or anyone else who might have helpful ideas if the information he has-from company or supplier sources-seems to him to warrant it. This system is simple and compact for a large company. Information and knowledge are collected from those who have it. And once a selling company is on the list approved for reliability and quality of product, there is little chance of missed opportunities or of wasted time in calls.

Another firm has a mechanical engineer in the Purchasing Department. Machine tool salesmen call on him, and he goes with them to the plant departments that use the kind of equipment each is selling.

A firm that has a Production Engineer or other expert of sufficiently high calibre, can use him to advantage as a coordinator, or let him handle the case up to the final stage

of procurement.

The organization of every company differs in some respects from that of others, and the system may have to be modified accordingly. But the basic principles of coordination and communication can always be applied. The important thing is to set up a procedure that will get the desired results.

URC

The Pulse of Business

DECEMBER, 1954

PURCHASING'S Summary of

conditions

Optimistic signs of the past few months have developed into a definite pattern of business pick-up. Coming out of a stable third quarter, industrial activity appears headed for a relatively strong pace in the closing months of the year.

e c o n o m i c As it issued its July-September report on total output of goods and services, the Commerce Department said 1954's gross national product should fall between 1953's total of \$365 billion and the \$346 billion figure for 1952, if production holds steady during the last quarter.

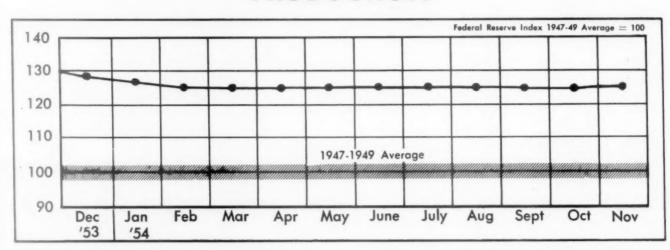
> Production is not only holding steady, but pushing gently upward, reports the Federal Reserve Board. With steel and durable goods setting the pace, output increased in October and early November enough to boost the board's index a point to 125. The accompanying summary of conditions shows construction and retail sales remaining at high levels, and unemployment dropping more than usual for the period.

Automobile manufacture, at a record pace during these last two months of the year, may push the production index up a couple of more points, assuming all other components of the figure remain steady. Will too many cars be made? Public reception of the new models appears favorable, with some dealers reporting orders at a four-year high. A bearish factor, however, is the used-car market. High production of new autos will probably drive down prices on the old models. This would increase the price the consumer has to pay on a trade-in, thereby dampening his enthusiasm. The next few months will tell the story.

Performance of stocks following the election is as puzzling to many of the experts as Election Day performance of the voters was. Since the returns were tabulated the market has been hitting 25-year highs almost daily. The consensus seems to be that there is wide relief over the fact that the country did not swing far to the left. No group got a "mandate from the people" to wield a stick on business - so confidence in the over-all outlook remains high.

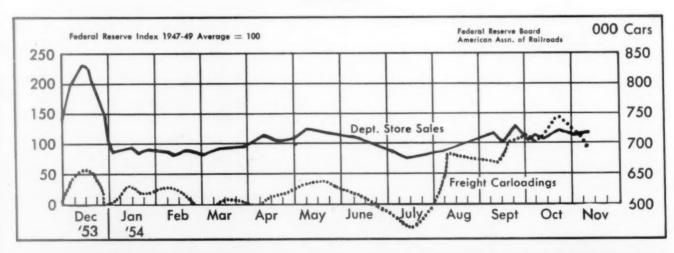
THE PULSE OF BUSINESS

PRODUCTION



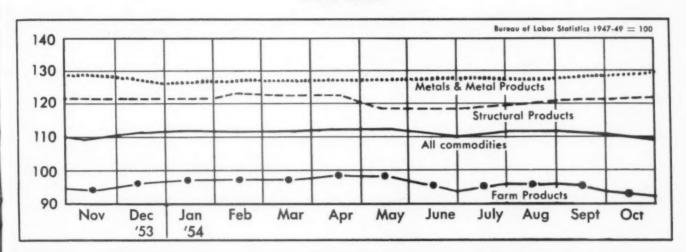
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CH	ANGE IN YEAR
Industrial Declarities Indus	1047.40	100 105	104	100		0.1
Industrial Production Index			124	136	+ 0.8	-8.1
			1,735	2,081	+ 6.1	-11.5
Electric Power Production (Weekly)	mil KWH	9,357	9,158	8,398	+ 2.1	+11.4
Bituminous Coal Production (Weekly)	000 net ton	s 8,435	8,070	8,845	+ 4.5	-4.6
Auto, Truck & Bus Output (Weekly)	units	117,922	74,558	129,269	+58.1	-8.8
Petroleum Output (Daily Average)	000 bbls.	6,191	6,144	6,130	+ 0.7	+ 1.0

TRADE



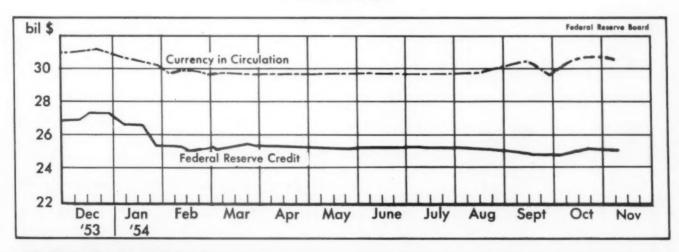
B	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CH	ANGE IN YEAR
Dept. Stores Sales Index (Fed. Res.)	no.	=100 117 204 695,097 347,397	110 192 703,193 347,827	113 207 747,888 371,422	$+6.0 \\ +6.2 \\ -1.1 \\ -0.1$	+ 3.5 1.4 6.9 6.5

PRICES



	BASE	LATEST	MONTH	YEAR	% OF CH	ANGE IN
	DASE	LATEST	AGO	AGO	MONTH	YEAR
All Commodities (BLS)	1947-49==100	109.7	110.0	110.2	- 0.3	- 0.5
Farm Products	1947-49==100	93.1	93.6	95.2	-0.5	-2.2
Metals & Metal Products	1947-49=100	129.7	129.1	127.8	+ 0.5	+ 1.5
Structural Products	1947-49=100	121.9	121.7	120.7	+ 0.2	+ 0.9
Steel Billets (Pittsburgh)	net ton	\$64.00	\$64.00	\$62.00	0	+ 3.2
Steel Scrap, heavy melting, Pitts		33.00	32.50	37.50	+ 1.0	-12.0
Copper, electrolytic	lb.	.30	.30	.30	0	0
Rubber (rib-smoked sheets)		.281/2	.263/8	$.201/_{2}$	+ 8.1	+39.0

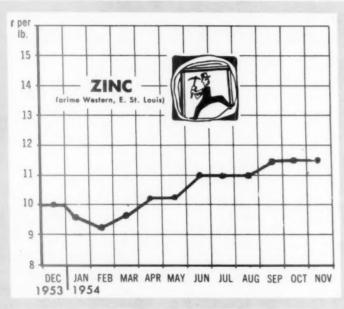
FINANCE

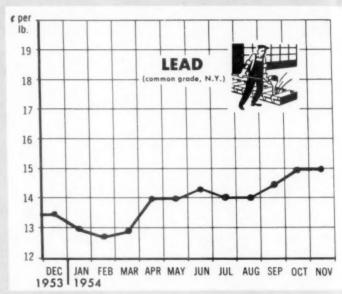


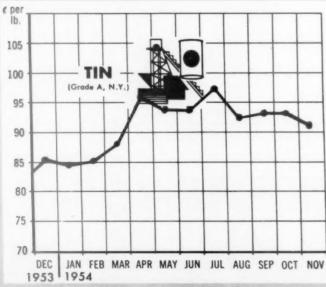
	BASE	LATEST	MONTH AGO	YEAR AGO	% OF CHA	ANGE IN YEAR
Stock Prices (Standard & Poor's)	1926=100	265.8	259.6	194.2	+ 2.4	+36.9
Bank Clearings (New York)	mil \$	10,639	11,253	8,281	- 5.4	+20.6
Federal Reserve Credit	mil \$	25,495	25,501	26,830	0.02	-5.0
Currency in Circulation	mil \$	30,138	30,051	30,428	+ 0.2	-0.1

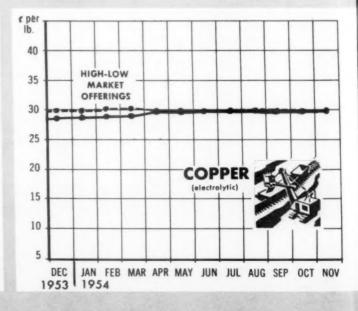
Prices of Key Commodities Expected to Remain Generally Steady

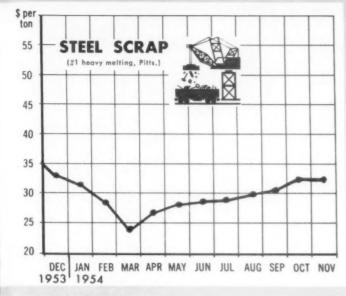
Near term outlook for most commodities is for little change from current price levels. Non-ferrous metal prices are supported by government stockpiling. Scrap steel prices are expected to steady after their recent climb which reflected both increased steel output and export demand. Coal prices could recover slightly from their current depressed levels. There appears to be little prospect of higher prices for petroleum products. Although a continuation of the upward price trend for crude rubber is possible, steadiness near current levels is far more likely.

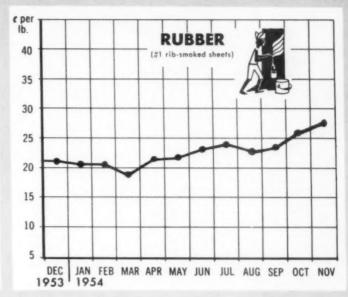


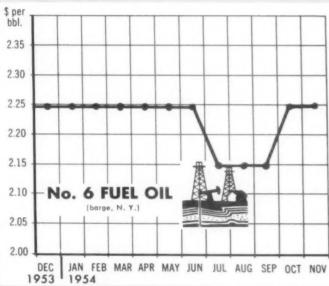


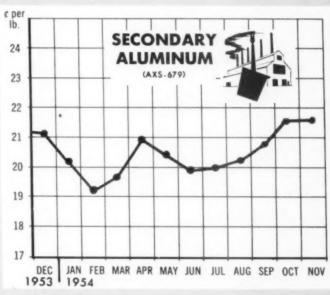


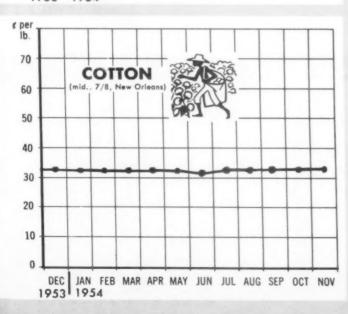


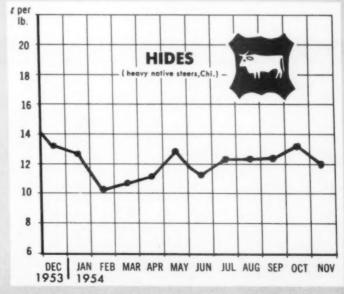










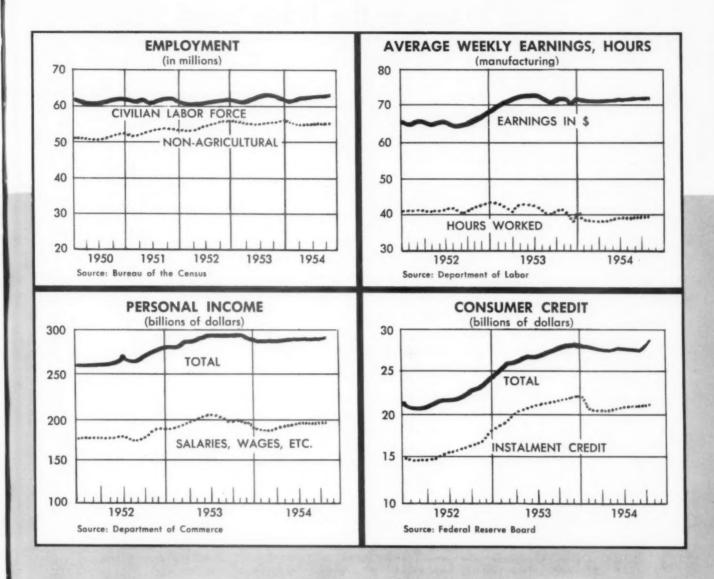


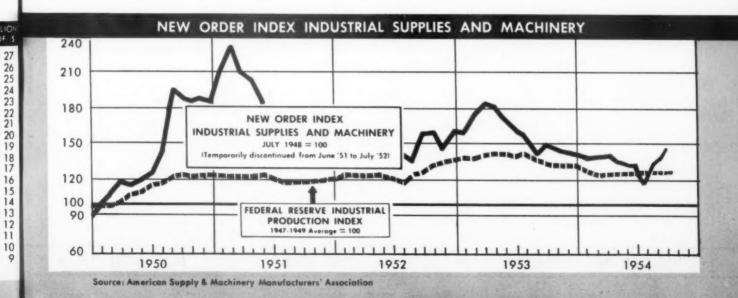
THE PULSE OF BUSINESS

Sales, Inventories and New Orders

Value of Manufacturers' Sales	1953			1954		
Seasonally Adjusted	Sept.	May	June	July	Aug. (r)	Sept. (p
(Millions of Dollars)				-		
Manufacturing industries	25,379	23,978	24,260	24,055	23,482	23,677
Durable goods industries	12,698	11,344	11,395	11,287	10,952	10,974
Primary metals	2,084	1,505	1,567	1,528	1,468	1,519
Fabricated metals	1,219	1,156	1,180	1,184	1,144	1,122
Electrical machinery	1,536	1,291	1,316	1,318	1,276	1,336
Machinery (except electrical)	2,163	1,862	1,901	1,920	1,838	1,868
Motor vehicles & equipment	2,023	2,083	1,974	1,800	1,774	1,563
Transportation equipment (exc. motor vehicles)	1,008	940	914	1,061	949	963
Furniture and fixtures	370	317	334	300	311	317
Lumber products (exc. furniture)	726	680	678	684	688	726
Stone, clay and glass products	607	601	599	608 354	597	612
Professional, scientific instruments	355	354	364	530	331	363
Other industries, incl. ordnance	607	555	568	12,768	576	586
landurable goods industries	12,681	12,634	12,865	3,748	12,530	12,70
Beverages	3,836	3,827	3,844 649	682	3,785 582	3,816
Tobacco products	662 315	304	299	301		30
Textile-mill products	1,031	1,115	1,064	1,040	1,023	1.03
Apparel	854	826	818	938	909	87
Leather and products	266	297	355	377	349	34
Paper and allied products	752	714	766	753	742	73
Printing and publishing	707	769	767	746	751 .	78
Chemicals and allied products	1,640	1,664	1,724	1,675	1,686	1,75
Petroleum and coal products	2,202	2,089	2,202	2,134	2,060	2.09
Rubber products	416	357	377	374	337	n.e
look value of Manufacturers' Inventories						
Seasonally Adjusted						
(Millions of Dollars)						
Manufacturing industries	47,087	44.798	44,535	44,194	43,929	43,637
Durable goods industries	26,958	24,926	24,689	24,383	24,232	24,10
Primary metals	3,513	3,153	3,071	3,107	3,082	3,06
Fabricated metals	2,962	2,768	2,831	2,773	2,759	2,73
Electrical Machinery	3,425	3,103	3,062	3,049	3,041	3,01
Machinery (exc. electrical)	5,667	5,222	5,148	5,097	5,101	5,05
Motor vehicles & equipment	3,498	3,098	3,021	2,899	2,790	2,76
Transportation equipment (exc. motor vehicles)	2,751	2,652	2,691	2,622	2,695	2,71
Furniture and fixtures	674	661	650	664	656	67
Lumber products (exc. furniture)	1,123	1,003	981	958	944	94
Stone, clay and glass products	884	919	895	883	866	87
Professional, scientific instruments	878	888	874	862	850	83
Other Industries, Incl. ordnance	1,583	1,459	1,465	1,469	1,448	1,43
londurable goods industries	20,129	19,872	19,846	19,811	19,697	19,53
Food and kindred products	3,445	3,544	3,492	3,468	3,437	3,40
Beverages	1,139	1,195	1,209	1,222	1,198	1,16
Tobacco products	1,834	1,877	1,887	1,930	1,912	1,86
Textile-mill products	2,612	2,412	2,422	2,376	2,383	2,36
Apparel	1,907	1,792	1,762	1,760	1,766	1,74
Leather and products	574	581	595	580	567	1,02
Paper and allied products	1,038	1,061	1,046	1,021	1,007	75
Printing and publishing	772	756	748	734	735	3,10
Chemicals and allied products	3,169	3,053	3,085	3,146	3,147	2,79
Petroleum and coal products	908	810	2,771 829	784	761	n.
Manufacturers' New Orders (Adjusted)						
Manufacturing industries	22,661	22,819	22,876	22,551	22,560	24,18
Durable goods industries	10,110	10,050	9,985	9,700	9,978	11,34
	12,551	12,769	12,891	12,851	12,582	12,84







Straws in the Trade Wind

- MACHINE TOOLS PICK UP Post-Korea slump in machine tools industry seems just about over. Result of hard selling activities shows substantial increase in new orders and sales. Big sales pitch is based on higher productivity and lower costs possible with modern equipment. Engineering staffs going all out on new developments to increase efficiency of equipment and make existing items obsolescent.
- OPTIMISTIC AIR FREIGHT OUTLOOK With cargo now running in the neighborhood of 400,000 tons, air freight carriers are expecting further growth. Airlines are sufficiently confident of the future to buy planes specifically designed for cargo. Such special equipment can improve service and lower costs. It is expected that air freight advantages will be pushed vigorously in the near future.
- ELECTRONIC OFFICES AHEAD Are we on the threshold of a revolution in office procedures and methods? Electronic computer manufacturers think so. Broad use of lec

computer manufacturers think so. Broad use of electronic office equipment is predicted in the next few years. New equipment now available - and future models still in the design stage - promises to cut clerical costs drastically and provide management with more and better information for making decisions.

- COAL INDUSTRY RECUPERATING General business pickup is claimed as biggest factor in revival of coal industry. During week ended November 6, miners dug estimated 8.4 million tons of soft coal 5% less than a year ago. During March, low point for 1954, the corresponding figure was a mere 6.3 million tons off 20% from previous year. Big coal burners, steel and utilities, placing greater demands. Power output, in November, toppled previous records, running 11% over 1953. Snap back of steel output to highest level in months, also being felt. All signs indicate firming up of coal prices.
- PROFITS CONTINUE HIGH National City Bank Letter reports that profits after taxes of the 498 largest manufacturing companies totalled \$4,474,000,000 for the first nine months of this year. This is a 4% increase over 1953. Tax reductions more than offset the effect of lower sales and reduced pre-tax earnings. Bright spots were drug, cosmetic, office equipment, cement, glass and stone industries. Suffering curtailed earnings were the steel, auto parts and railway equipment industries.

A

He

me

ta

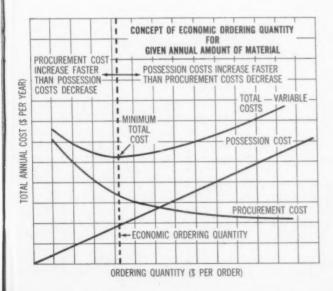
ch

ra

Economic Ordering Quantity Guide

Here is a convenient reference table that helps make inventory control and purchasing effective by indicating the economic ordering quantities for purchase requirements where annual use of an item can be estimated and where quantity discounts apply. The mathematical basis of the calculation is included to show how the table was derived, and to enable you to make your own tabulation where costs of purchasing and inventory charges vary from the \$3 per order and 25% per year rates used in this example.

By Robert M. Elsworth, Service Shops Department and Lindon E. Saline, Analytical Engineering Section General Electric Company Schenectady, N. Y.



ONTROL" is a very popular word in industry today. Usually, control indicates some method of recognizing and correcting variances from predetermined standards.

Inventory control is an essential element of good management practice. Many business failures can be traced to the lack of proper control of inventory. A starting point for the control of inventory is the establishment of an economic ordering guide to serve as a standard for determining the quantity of a material to be purchased at any given time. This assumes a thorough knowledge of the nature of the business, as well as its cost characteristics.

The best quantity of material to purchase at any given time depends on the balance between the cost of possession of inventory and the cost of procuring that inventory. Having determined these factors, simple guides for establishing economic ordering quantities can easily be designed to aid inventory control and purchasing personnel in carrying out their functions. This paper presents and demonstrates a sample economic ordering guide based on the annual purchase cost (total dollar value) of the material to be ordered. The business and mathematical concepts used in its development are discussed.

Y.

TABLE I

Range of Acceptable Ordering Quantities Shown as—Maximum/Optimum—Percentage Of Annual Supply

Best Available Estimate of Total Annual Purchase Cost (Dollars)

% Discounts on Total Annual Purchase Cost

,											
	0	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
Over 106,553 38,360—106,553 19,572—38,359 11,840—19,571 7,927—11,839	1/1 2/2 3/3 4/4 5/5	10/1 12/2 14/3 15/4 17/5	18/1 20/2 22/3 24/4 26/5	27/1 29/2 31/3 33/4 34/5	35/1 37/2 39/3 41/4 43/5	44/1 46/2 48/3 50/4 52/5	53/1 55/2 57/3 59/4 61/5	62/1 64/2 67/3 69/4 71/5	72/1 74/2 76/3 78/4 80/5	81/1 84/2 86/3 88/4 90/5	91/1 93/2 95/3 98/4 100/5
5,676— 7,926 4,263— 5,675 3,319— 4,262 2,657— 3,318 2,175— 2,656	6/6 7/7 8/8 9/9 10/10	18/6 20/7 21/8 23/9 24/10	27/6 29/7 31/8 32/9 34/10	36/6 38/7 40/8 41/9 43/10	45/5 47/7 49/8 50/9 52/10	54/6 56/7 58/8 60/9 61/10	63/6 65/7 67/8 69/9 71/10	73/6 75/7 77/8 79/9 80/10	82/6 84/7 86/8 88/9 90/10	94/7 96/8 98/9	102/6 104/7 106/8 108/9 110/10
1,814— 2,174 1,536— 1,813 1,316— 1,535 1,142— 1,315 999— 1,141	12/12 13/13 14/14	28/13 30/14	40/14	45/11 46/12 48/13 50/14 51/15	54/11 56/12 57/13 59/14 61/15	63/11 65/12 67/13 69/14 70/15	73/11 75/12 76/13 78/14 80/15	82/11 84/12 86/13 88/14 90/15	94/12 96/13 98/14	102/11 104/12 106/13 108/14 110/15	116/13 118/14
784— 881 701— 783	17/17 18/18	35/18 37/19	44/17 46/18	53/16 54/17 56/18 57/19 59/20	62/16 64/17 66/18 67/19 69/20	72/16 74/17 76/18 77/19 79/20	82/16 84/17 85/18 87/19 89/20	94/17 95/18 97/19	104/17 105/18 107/19	112/16 114/17 116/18 118/19 119/20	124/17 126/18 128/19
519— 571 474— 518 435— 473 401— 434 370— 400		42/23 43/24	53/23 55/24	61/21 62/22 64/23 65/24 67/25	71/21 72/22 74/23 75/24 77/25	81/21 82/22 84/23 86/24 87/25	92/22 94/23 96/24	101/21 103/22 104/23 106/24 108/25	113/22 115/23 116/24	123/22 125/23 127/24	132/21 134/22 136/23 138/24 140/25
343— 369 318— 342 296— 317 276— 295 258— 275	26/26 27/27 28/28 29/29 30/30	47/27 48/28 50/29	60/28 62/29	68/26 70/27 71/28 73/29 74/30	79/26 80/27 82/28 83/29 85/30	89/26 91/27 92/28 94/29 95/30	101/27 103/28 104/29	110/26 111/27 113/28 115/29 116/30	122/27 124/28 125/29	132/27 134/28 136/29	143/27 145/28
242— 257 228— 241 214— 227 203— 213 191— 202	31/31 32/32 33/33 34/34 35/35	55/33 56/34		76/31 77/32 79/33 80/34 81/35	91/34	100/33 102/34	111/33 113/34	118/31 120/32 122/33 123/34 125/35	131/32 132/33 134/34	142/32 143/33 145/34	154/33 156/34
	37/37 38/38 39/39	60/37	74/38 75/39	83/36 84/37 86/38 87/39 89/40	96/37 97/38 99/39	107/37 108/38 110/39	117/37 119/38 121/39	127/36 128/37 130/38 132/39 133/40	139/37 141/38 143/39	151/37 152/38 154/39	162/37 164/38 165/39
140— 147 134— 139 128— 133 122— 127 116— 121	42/42 43/43 44/44	67/43 68/44	79/42	93/43 94/44	103/42 105/43 106/44	114/42 116/43 117/44	126/42 127/43 129/44	135/41 137/42 138/43 140/44 142/45	148/42 150/43 151/44	159/42 161/43 163/44	171/42 173/43 174/44
112— 115 107— 111 103— 106 99— 102 98 or less	46/46 47/47 48/48 49/49 50/50	72/47 73/48 75/49	85/46 86/47 87/48 89/49 90/50	99/47 100/48 101/49	110/47 112/48 113/49	122/47 124/48 125/49	134/47 135/48 137/49	143/46 145/47 147/48 148/49 150/50	156/47 158/48 160/49	168/47 170/48 172/49	180/47 182/48

HOW TO USE THE ORDERING GUIDE

Example I

10,000 rolls of cotton tape at 33¢ per roll, or 100 ball bearings at \$33 per set, result in a total annual purchase cost of \$3,300.

6

12

16

17

/8

19

10

/11 /12 /13 /14 /15

/16 /17 /18 /19 /20

/21 /22 /23

/24/25

/26 /27 /28 /29 /30

/31 /32 /33 /34 /35

/36 /37 /38 /39 /40

/41 /42 /43

/44

/45

3/46 0/47 2/48 3/49

/50

SING

Enter the left hand column of the ordering guide at the line "\$2,657 to \$3,318" and read to the right of the slanted line in the column under 0% discount the economic ordering quantity of 9% of a year's supply. That is, about 900 rolls of tape or 9 ball bearings is an economic ordering quantity.

Example II

To illustrate the use of the ordering guide in evaluating quantity discounts, consider an offer by the vendor to sell the above tape for 30¢ per roll in quantities of 10,000 or more. The "batch" discount tendered is 9% on the original price of 33¢ per roll.

Hence, enter the guide on the "\$2,657 to \$3,318" line and move horizontally to the column marked 9% discount. Read to the left of the slanted line a break-even ordering quantity of 98% of the year's supply. The discount applies only to orders of 10,000 or more rolls, which corresponds to 100% of the year's supply. Hence the 9% discount is not more economical to the purchaser than purchasing the tape in quantities of 900 rolls at no discount. Furthermore, buying in the smaller quantity gives greater flexibility in the forecasting of annual requirements and frees space for more productive effort.

Example III

A shop requires 400 rolls of solder per year. The vendor offers the solder at \$5 per roll in small quantities, and \$4.75 in quantities of 100 rolls or more. The total annual purchase cost is $400 \times \$5$, or \$2,000. Hence, the economic ordering quantity is 11% of the year's supply, or 44 rolls.

The \$4.75 price represents a 5% discount on the \$5 price. Moving horizontally to the 5% column, find a break-even quantity of 63%. This means that, at most, 252 rolls can be ordered at \$4.75 each for the same total annual cost as 44 rolls per order at \$5 per roll.

The economic ordering quantity at \$4.75 per roll (\$1,900 total annual purchase cost) is also 11% or 44 rolls, which is less than the minimum order of 100 rolls required for the 5% discount. The lowest total annual cost can be achieved, therefore, by ordering the minimum allowable quantity (100 rolls) which gives the discount price of \$4.75 per roll.

Cost of Inventory

Fundamentally, the total annual cost of inventory maintenance is composed of four parts:

1. Total annual purchase cost (number of units used each year x the unit cost).

2. Procurement cost (number of times material is ordered x the cost of placing and receiving an order).

3. Cost of possession of inventory (charges on investment, storage, obsolescence, etc.).

4. Buffer stock to insure against unforeseen delays in delivery, rejected shipments, and unforeseen demand.

The tables presented here are based on the concept that the best available estimate of total annual purchase costs is the primary factor that establishes economic ordering guides. The simplest "best available" estimate is oftentimes an extrapolation or projection of historical records, tempered by known changes in requirements or rates of use. Buffer stocks and economic ordering guides determine the annual rate of turnover.

Economic ordering quantities are not greatly dependent on the size of buffer stock. Since the determination of optimum buffer stock is outside the scope of this paper, and as its influence is generally small, it can be ignored without affecting the results desired.

Figure 1 illustrates the concept of economic ordering quantity for a given dollar amount of material. The cost of possession is zero if the material is received and immediately processed and shipped. As larger amounts of material are purchased, some of it waits in the stockroom and some of it is tied up in work-in-process. Possession of the material costs money for carrying charges, storage charges, handling, obsolescence, etc. These possession charges are usually directly proportional to the quantity of material in possession. Hence, for a period of time, the "cost of possession" curve on Figure 1 is practically a straight line.

The cost of procuring (ordering, receiving, inspecting, etc.) a year's supply of material decreases as the quantity purchased at each ordering time increases. The procurement charges associated with a year's supply of goods purchased on a single order are much less than the procurement charges associated with the same total amount of material purchased in 52 separate weekly orders. Thus the "cost of procurement" curve on Figure 1 is a declining curve, showing a decrease in cost as the ordering quantity increases.

The total annual cost of maintaining an inventory (excluding buffer stock) is simply the sum of:

Purchase Cost
plus
Possession Cost
plus
Procurement Cost

Purchasing cost is constant, except as quantity discounts may be involved. (The consideration of discounts is discussed later.) Therefore, the minimum total annual cost (Figure 1) occurs at the point where the savings in procurement cost realized through the purchase of an additional unit of material exactly equal the increase in possession costs for an additional unit of material. (This is simply a restatement of Kelvin's generalized law that the

minimum occurs where the rate of change of the fixed costs are equal and opposite to the rate of change in variable costs.) For ordering quantities larger than the optimum, the possession costs increase faster than the procurement costs decrease. For ordering quantities smaller than the optimum, the procurement costs increase faster than the possession costs decrease.

Economic Ordering Guide

The sample table shown herewith is designed to aid inventory control and purchasing personnel in making decisions about the quantity of material to be ordered at any given time, for most economical total inventory cost. These guides are based on the best available estimate of total annual purchase cost, and on per cent discount tendered by the vendor. Tables such as this can be prepared by evaluating the formulae subsequently presented, on business machines available in most accounting offices. For the table shown, procurement cost is taken as \$3 per order, and possession cost is taken as 25% per yearthe economic factors utilized in one department of the General Electric Company. The tabulated quantities would of course vary as different values for cost of procurement and of possession are substituted in the formulae.

Table I is a summary of economic ordering quantities, in per cent of year's supply (best available estimate) for various total annual purchase costs and "batch" discounts. The left hand column of this table is the Total Annual Purchase Cost (best available estimate), in which dollars have been grouped within practical operational limits for quick evaluation. The headings of the other columns (0 to 10%) are the "batch" discounts which might be offered on the total annual purchase cost shown in the left hand column

The number to the right of the slanted line is the most economic ordering quantity (in per cent of estimated annual requirements) for the total annual purchase quantity and discounts listed. The number to the left of the slanted line is the maximum ordering quantity which gives a break-even cost between zero discount and the discount listed for each total annual purchase cost. That is to say, optimum performance is realized by purchasing the quantity shown to the right of the slanted line. However, economies can be realized by purchasing any quantity up to the value given on the left of the slanted line. Several illustrative examples are cited to show how to use this table.

Mathematical Formulation

This analysis and computation are based on the concept that the commodity under consideration is "purchase cost". There is no difference in the economics of purchasing 100 bearings at \$33 each, or 10,000 rolls of cotton tape at 33¢ each. In either case, it is desired to utilize \$3,300 of "purchase cost" economically. Furthermore, practical considerations suggest that ordering quantities should be designated in terms of time periods—for example "months supply" or "weeks supply" or "days supply", which is here accomplished by using the factor "per cent of year's supply". This designation permits the stock clerks to associate purchase cost and a time period, which are basic considerations in the implementation of an effective inventory control scheme.

Although purchase cost and inventory charges are

given as annual rates in the formulae developed here, the formulae are applicable for any time period so long as the rate of purchase costs during the time period has been converted to an annual rate.

The formula is as follows:

Let: P = total annual purchase cost in dollars (number of units x unit cost)

S = procurement cost (dollars per order)
I = inventory charges (per cent per year)

Q = ordering quantity (no different of year's supply)

C = total annual cost (dollars per year)

C_m = minimum total annual cost (dollars per year)
B = buffer stock (per cent of year's supply)

T = annual turnover rate

The total annual cost of a certain annual purchase cost and ordering quantity is purchase cost + possession cost + procurement costs. The possession costs assume that the average inventory on hand is

 $\frac{Q}{2}$ and is valued at P x $(\frac{Q}{2} \times \frac{1}{100})$ so that the in-

ventory charges amount to P x $(\frac{Q}{2} \times \frac{1}{100}) \times \frac{I}{100}$

The procurement costs are based on the number of 100

orders per year (——) so that procurement costs are

 $(\frac{100}{Q})$ x S. This gives us formula (1):

$$C = P + \frac{PIQ}{20,000} + \frac{100S}{Q}$$

The economic ordering quantity as defined by Kelvin's law (Figure 1) is found by differentiating C dC

with respect to Q and solving - = O for Q. The dQ

value of Q thus found is the economic ordering quantity Q' given by the formula (2):

$$Q' = 1414 \sqrt{\frac{S}{PI}}$$

By substituting Q' for Q in formula (1), the minimum annual cost for a certain total annual purchase cost is found to be (3).

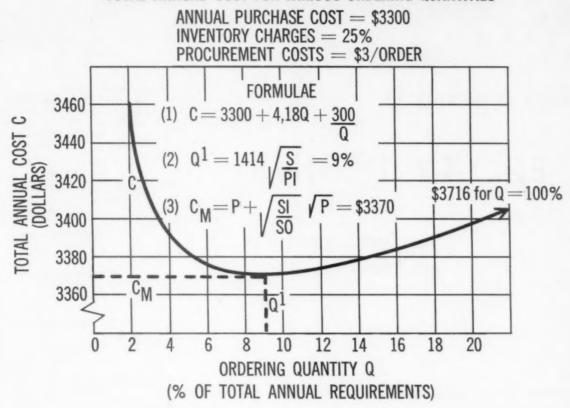
cost is found to be (3):
$$C_{m} = P + \sqrt{\frac{SI}{50}} \sqrt{P}$$

The quantities calculated by these formulae are illustrated on Figure 2 for a procurement cost of \$3 per order, inventory charge of 25% per year, and an annual item purchase cost of \$3,300. (See Example I.)

Figure 2 shows that, for the example used, the total annual cost for various ordering quantities has a minimum value of \$3,370 when the ordering quantity is 9% of the annual requirement. If the entire year's supply is purchased in one order or quantity (Q=100%), the cost is \$3,716, or more than 10% higher cost than the minimum amount. If, however, the ordering quantity is doubled (Q=18%), the total annual cost is \$3,390, or only 0.6% higher than the minimum cost.

Similar quantitative relations exist for all ordering problems, and demonstrate the flexibility that exists in the use of economic ordering guides. That is, the real value of these guides is that they indicate the

TOTAL ANNUAL COST FOR VARIOUS ORDERING QUANTITIES



approximate quantities to be ordered, subject to practical considerations which cannot easily be incorporated in simple charts. Ordering guides are just that; they are guides—they are not hard-and-fast rules that must be followed precisely.

For example, the tables indicate that economies may be realized, mathematically, by ordering more than an estimated year's supply. But practical experience and good judgment would indicate that ordering such large quantities is a questionable practice. It must be recognized that the length of time during which the "cost of possession" curve is a straight line depends on the nature of the business involved. It is straight only for that period of time during which one expects no radical design changes or excessive material deterioration. These factors will establish a practical limit for those values to the left of the slanted line or the ceiling on the size of the ordering quantities.

Evaluating Quantity Discounts

Quantity discounts may be given on a continuous or batch basis. Quantity discounts on a continuous basis imply that the unit price becomes continuously smaller as the number of units in a given order increases. Quantity discounts on a batch basis imply that after a certain quantity of units is purchased, the unit price is decreased. Both types of discounts can be handled analytically.

For the continuous-type quantity discount, the

annual purchase cost P is written as an analytic function of the ordering quantity Q and is substituted into formula (1) for the total cost. The total annual cost C is then differentiated with respect to Q and equated to zero; the resulting equation is solved to find the economic ordering quantity Q'. The relation between P and Q determines the complexity of the equation which must be solved for Q'. In most cases, the calculation would be relatively easy for digital computers that are available in many accounting offices.

For the batch-type quantity discount, a comparison can be made to determine the maximum percentage of the year's supply which can be purchased and still break even with the optimum quantity at nodiscount cost. This is what has been done in calculating the values shown in Table 1. The procedure is to equate formulae (3) and (1), substituting (1-x)P for P in formula (1), and solve the resulting equation for Q. (x = the per unit discount for a certain quantity of units, and Q = the maximum percentage of the year's supply that can be purchased to break-even with the no-discount price.)

The formula for Q in this instance is:

$$\frac{C_{m} - (1-x)P + \sqrt{\left[C_{m} - (1-x)P\right]\left[2 - \frac{(1-x)PSI}{50}\right]}}{\frac{(1-x)PI}{10,000}}$$

IG

Industry is turning to

EPOXY RESINS

for better products and lower costs

By F. S. Swackhamer

Manager, Resins and Plastics Department, Shell Chemical Corporation

NTRODUCED only four years ago, epoxy resins have been widely used in a variety of industries to improve products and processes. Their unusual physical, chemical and electrical properties have enabled them to replace certain established resins and open up applications where prevailing materials have not been satisfactory. The resins are thoroughly horizontal materials contributing to finished products in the paint, plastics and fabricating industries.

The industrial purchasing agent may consider the epoxies from these areas of interest:

- 1. How can they improve the appearance or performance of our product?
- 2. How can they reduce manufacturing costs?
- 3. Do they present new product possibilities?
- 4. How do they fit into our plant maintenance program?

A review of some current applications suggests practical ways in which epoxy resins can meet your specific needs.

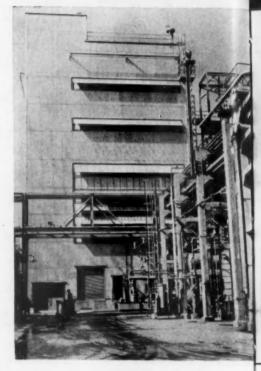
Product Finishing

In surface coating formulations, for instance, these resins have improved durability and increased the corrosion and chemical resistance of a variety of product finishes.

Makers of automatic washing machines, who need optimum resistance to attack from alkalies and detergents, were among the first to adopt finishes based on epoxy resins on a full production basis. Today, the acceptance of primers based on epoxy resins is close to 100% in this branch of the appliance industry.

Westinghouse Electric Corporation conducted a series of accelerated tests on nine paint formulations under severe conditions of humidity, salt spray and detergency. The Epon* primer showed a three-fold increase in resistance to these hazards, even though the film was only

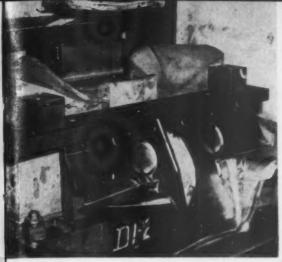
*Registered trademark, Shell Chemical Corporation Completion of Shell's new plant at Houston has tripled the company's capacity to produce epoxy resins. Price reductions on the new material were announced recently by leading suppliers.



one-third the thickness of primers previously used on Laundromat components.

After years of experimenting on different methods of "bluing" its air rifle barrels, Daisy Manufacturing Co., Plymouth, Mich., adopted an Epon blue baking enamel. It was the first paint to stand up under destructive testing and still meet appearance requirements. The paint also provides excellent corrosion resistance. The new finish, applied by a Ransburg No. 2 electrostatic unit, has eliminated the traditional fused-salt pot method. The company has been able to conveyorize completely and get maximum production in minimum space.

An epoxy based finish is now being applied to the exhaust path areas of DC-6 and DC-7 planes, made by Douglas Aircraft Company. Use of synthetic fire-resistant hydraulic fluids in these planes called



Epoxy resin was cast over a polyester core to build this restrike die for experimental work on automotive shields. The resin adheres well to the core, has high physical strength and is non-corrosive to metals.

Washing machine cabinets being sprayed with a primer based on epoxy resins. High resistance of the primer to corrosive and caustic attack is of great importance in this application, since in certain areas of the country the machines are often used and stored in outdoor atmospheres of varying humidity.

General Characteristics of Epoxy Resins

This newest and most versatile of the synthetic resins, which only emerged from the pilot plant stage in 1950, is currently being produced at the rate of 12 million lbs. per year (way up now). It is noteworthy that practically all of the large materials manufacturers are developing new products to take advantage of the unusual characteristics obtainable in this molecular structure and that a score or more of small firms are formulating special epoxy compositions for a growing range of applications.

The epoxy resins are based on ethylene oxide or its homologs or derivatives. The earliest commercial product of this type is Carbowax, made by polymerization of ethylene oxide; it is a straight chain thermoplastic polymer. Compounds that have ethylene oxide groups at both ends are capable not only of chain formation but also of cross linking, thus leading to insoluble and infusible substances.

—Abstracted from Modern Plastics Encyclopedia, by permission.

Interesting tooling application of epoxy resin is this glass fibre reinforced drill basket. It is shown in use at A. V. Roe Co., Ltd., Toronto, in the production of jet fighters.

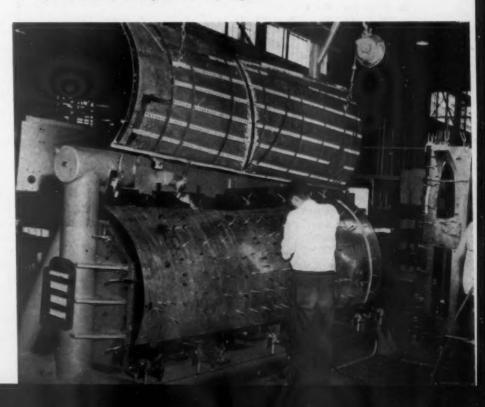
for a finish with superior resistance properties. It has to stand up under wind and rain erosion at air speeds up to 400 mph, and must withstand temperatures up to 300F. It has to resist cleaners used to remove exhaust deposits, have good appearance, and be available in different colors to meet airline insignia requirements.

From more than 300 paint formulations submitted, the epoxy based paint was found to give perfect protection against exhaust gas corrosion and to resist completely the synthetic hydraulic fluid. One airline operator reports coatings still intact after more than 1000 hours' operation.

Advances In Plastic Tooling

In the rapidly growing field of plastic tooling, epoxy resins are playing an important part.

Epoxy tooling has been used successfully in prototype automotive



DECEMBER, 1954

production in producing plastic-glass fiber reinforced cars, and has replaced cast iron and steel die components. The resin may be cast over a core of dissimilar material, either plain or metal filled. It may be used with glass cloth in the same way for high strength tooling; or it may be used for the entire die, with or without the use of metal inserts.

A switch from cast iron dies to epoxy dies for the forming of ambulance roofs, for example, has cut tool costs from \$20 to \$2.

Excellent dimensional stability, adhesion, impact strength and toughness, along with its room-temperature, no-pressure characteristics, make these resins attractive to the tool and die industries. Duotherm, Inc., a major heating equipment maker, is now testing Epon draw and form dies for sheet steel forming on a production basis. They aim to replace steel dies and die components and get a lower initial cost, and lower die repair and maintenance costs. This will help them to meet new style changes quickly and economically.

Up to now, use of plastic tooling was limited because of rapid aging and shrinkage, relatively low physical strength, and corrosive effect on some of the metals being formed. Now, because of epoxy resins' higher tensile, compressive and impact strength, plastic tooling will be called upon for many applications previously thought impossible.

Strong Bonding Qualities

Structural products based on epoxy resins include adhesives, laminates, and casting and potting formulations

Goodyear Aircraft Corporation uses epoxy adhesives in the construction of laminated honeycomb structures of high load carrying capacity. Capitalizing on the high bond strength and low curing temperatures, Goodyear makes sandwichtype radar transmission screens, using the adhesive as a bonding agent as well as for reinforcement of fastening points.

North American Aviation is using Shell Chemical's solvent free Epon Adhesive VI and VIII in bonding aluminum honeycomb cores to aluminum and stainless steel facing sheets in secondary structural airframe parts. Chief advantages are the relatively low molding pressures required, the high bond strength, and the fact that glue lines may be made thick enough to accommodate imperfectly mated components.

EPON*	COATING		CASTING				VINY	
RESIN NO.	Air Dried	Baked	POTTING	TOOLING	ADHE- SIVE	NATE	STAPI- LIZER	L
828			×	х	х	X	х	
834	×		×	X ,	x	X	X	
1001	001 X X				х	x		
1004	x	x						
1007		х						-
1009		x			-	-		-

Footnotes: EPON resins are normally formulated with other resins (and curing to provide a wide range of end products.

*Registered Trade Mark, Shell Chemical Corporation.

The 100% solids content and low temperature curing properties are also of advantage in repairing damaged parts.

Although sales of these two adhesives are confined to the aircraft industry, Shell Chemical supplies epoxy resins to adhesive manufacturers for custom formulation and varied applications. Epoxy resins are well suited to bonding glass-to-glass, and glass to dissimilar surfaces, since the adhesives set at room temperatures and require only contact pressure.

The high bond strength of epoxy

resins in structural laminates, along with their heat and chemical resistance, is responsible for a growing number of new applications.

Apex Electric Company, Cleveland, for example, is using them in the production of air storage tanks for jet aircraft engines. The tanks are 13" in diameter and weigh only 16 pounds, nine pounds less than the previously used steel tanks. The new tank also has greater corrosion resistance than the steel tank.

Potting applications are well past the experimental stage. Lionel Cor-

BI.	OUTSTANDING PROPERTIES	TYPICAL APPLICATIONS						
	Excellent electrical properties, high strength, good thermal stability, low moisture absorption. Low shrinkage on curing. Excellent adhesion to glass, metals and almost all plastics. Outstanding chemical resistance.	Tools and dies, electrical potting and encapsulation, electrical laminates, high strength laminates for aircraft, high strength metalto-metal adhesives, glass reinforced, chemical resistant pipes and tanks.						
	Same as for Epon 828	Same as for Epon 828						
	Coatings: When cured with amines, produces coatings curing at low temperatures which combine chemical resistance properties equal to baked films with excellent adhesion and durability. Adhesives & Laminates: Same as for 828	Corrosion resistant maintenance paints for metal, concrete or wood. High strength laminates for use in aircraft and printed circuits.						
	When esterfied with vegetable oil acids, produce coating vehicles having excellent drying qualities and adhesion, and good chemical resistance and flexibility. Conversion of these ester vehicles with urea or melamine resins yields excellent baked finishes.	Floor varnishes, appliance finishes, metal decorating and trim paints, durable maintenance paints for industrial use.						
	When combined with phenolic or urea resins, yield baked coatings of outstanding chemical resistance, adhesion, and flexibility.	Can coatings, drum lin- ings, chemically resistant finishes, appliance prim- ers, hardware coatings.						
	Same as for Epon 1007	Chemically resistant finishes, wire coatings.						
ring c		Courtesy: Shell Chemical Corp.						
+		A						

poration, Irvington, N. J., has potted 300,000 small audio transformers for the Signal Corps. Potting makes the units impervious to moisture, fungus attack, effects of extreme temperatures, and other conditions that would lead to rapid deterioration.

Use In Protective Maintenance

The use of surface coatings based on epoxy resins is helping a number of companies decrease maintenance costs. These coatings permit a substantial reduction in frequency of painting, and increase the degree of protection afforded. At the Agricultural Chemicals Division of Diamond Alkali Company, Houston, paint is exposed to fumes of hydrogen chloride, sulphuric acid, free chlorine, benzene hexachloride, lindane and DDT. These had caused previous paint systems to break down after only a few months. Paint used in processing vessels and storage tanks subject to chlorinated solvent spillage also failed a few months after application.

The new paint, an Epon air dry system, to which an amine curing agent had been added, was applied to structural steel beams, stairways,

processing vessels, storage tanks and all types of motors. The first coat was a red lead primer the second a medium gray, and the third a high gloss light gray coat comparable to standard gloss enamels. Since present engineering requirements indicate that a dry film thickness of five mils is required for long-term durability, the Epon paint is applied to the same film thickness. This film thickness, however, requires but three coats of the new paint, whereas the previous paint called for five to six coats.

Despite the cumulative hazards, the present Epon coating shows no signs of deterioration after more than two years of exposure. The high gloss has been maintained at almost its initial brilliance. Ordinarily three paintings would have been required within this period. The manhours involved would have been the major cost factor in this maintenance painting.

Sun Oil Company uses Epon amine-cured paints to coat well-heads and drilling barges in Galveston East Bay. No failure has been reported after 16 months' exposure in this corrosive environment. Among the systems Sun Oil used before adoption of the present four-coat epoxy paint were: six coat vinyl, metallic sprayed zinc on three-coat vinyl, three-coat chlorinated rubber, cold applied tar

Factors responsible for the adoption of the epoxy system were: one-third to one-half lower paint cost, superior resistance to alternate wetting and drying, and the longer intervals between repainting. The system requires two coats of red lead primer and two finish coats of gray. In certain areas, a coat of high visibility orange is used. Standard spray guns are used to apply the paint.

enamels, and three coat phenolic.

This brief recounting of the several applications of epoxy resins in a variety of fields may be regarded only as a suggestion. It shows, however, that many companies are already counting on epoxy resins as a primary material, giving improved or superior performance and meeting the economic necessities of their operation.

To what new uses can the epoxy resins be put? From here, it seems as though industry has only touched upon the applications of the resins. In the future there may be hardly a place in industry where epoxy resins will not be found.

<u>-</u>

m

ge

ne

nd

ds

el

er

el

NG

Don't Add to Your Legal Liability

Purchasers may unnecessarily forfeit their legal rights in a transaction and their recourse to law under contracts and warranties, through vague agreements and ignorance of the basic principles that make contracts binding

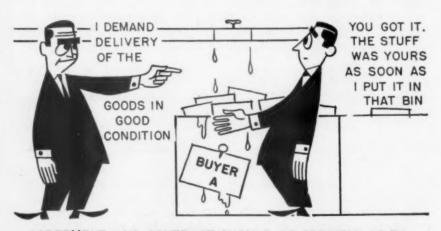
By Leo T. Parker

URING the past few months the higher courts in different states rendered several outstanding decisions which clearly illustrate how purchasers unfamiliar with elementary principles of law add to their normal liability. Knowledge of these interesting decisions will not only enable readers to avoid similar expensive law suits, but the hereinafter cited new cases can be used very advantageously by readers and lawyers to win unavoidable suits.

F.O.B. Clause

First, I shall answer an important legal question submitted by a reader. This reader wrote: "Several days ago we received a shipment of merchandise marked F.O.B. our city. In the sale contract there is a clause which provides that the seller's agent must sort out and repack the merchandise, and address the various smaller containers to our customers to whom we intend to sell the merchandise. In other words, we are wholesalers and the merchandise was shipped to us in large containers but the seller's agent agreed to repack the merchandise for shipment to various customers to whom we would sell different quantities of the goods. While the merchandise was in our warehouse a water pipe froze and burst at nighttime and ruined the merchandise. Our question is: Who is liable for damage to this merchandise? It is our contention that since the seller had agreed to resort and pack the merchandise in our warehouse the title to the merchandise did not pass to us, notwithstanding the F.O.B. clause to the contrary."

clarity. Hence, under different circumstances the term F.O.B. may have a different legal meaning. Generally speaking, any merchandise shipped F.O.B. a named point by a seller means that title to the merchandise passes to the purchaser at this point. Hence, it is my opinion



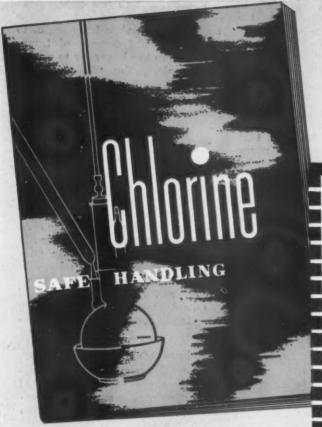
AGREEMENT AND CONTRACT SHOULD BE SPECIFIC AS TO WHEN TITLE PASSES TO PURCHASER

Some confusion has arisen through use of the term "F.O.B." in situations for which it was not originally intended. The term F.O.B. originally had to do with carriage or transportation by sea. When applied to railroad and motor truck transportation it loses some of its

that the purchaser who wrote the above letter must stand the loss.

Delivery to Warehouse

For illustration, in Seabrook Farms Company v. Commodity Credit Corporation, 206 Fed. (2d) 93, it was disclosed that a seller and



Brand New! 28 Illustrated Pages

invaluable for mon who

for men who work with chlorine

Name.

Company

Street

A POCKET-SIZE GUIDE ON ACCEPTED SAFE PRACTICES. TELLS ALL THE ESSENTIAL FACTS ABOUT CHLORINE—SHIPPING, HANDLING, STORAGE AND HOW DANGERS CAN BE AVOIDED. EACH OF YOUR MEN WHO WORKS WITH CHLORINE SHOULD HAVE A COPY.

TYPICAL PAGES



COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER PITTSBURGH 22 PENNSYLVANIA



DISTRICT OFFICES: Cincinnati •

Charlotte • Chicago • Cleveland •

Boston • New York • St. Louis •

Minneapolis • New Orleans • Dallas

• Houston • Pittsburgh • Philadelphia

San Francisco

Write for your

FREE copies now

Columbia-Southern Chemical Corporation One Gateway Center, Pittsburgh 22, Pa. Gentlemen: Please send me at no cost...

your new booklet on the Safe Handling of Chlorine.

a buyer signed a sale contract which contained a printed provision marked "F.O.B." Following this "F.O.B." in typewritten letters appears "Cumberland Warehouse, Bridgeton, New Jersey"

In subsequent litigation the testimony showed that the merchandise was stored in the warehouse in bins for individual purchasers. In other words, purchaser A's peas were put in a different bin from those of purchaser B. The warehouse issued warehouse receipts to the various purchasers.

The lower court held, after considerable discussion and presenta-

"We have no doubt that the parties intended this delivery to be the transfer of title by the seller to the buyer of the peas. To support the conclusion, we do not have to depend upon the term 'F.O.B. Cumberland Warehouse' alone."

What Is the Intent?

This higher court explained that in a sale of goods title usually passes when the parties intend it so to do. However, unless a different intention appears, the following are rules for ascertaining the intention of the parties as to the time at which the If a contract to sell requires the seller to deliver the goods to the buyer, or at a particular place, or to pay the freight or cost of transportation to the buyer, or to a particular place, the title does not pass until the goods have been delivered to the buyer or reached the place agreed upon.

Be Specific

Therefore, it is quite apparent that the law is quite complex relating to when title to purchased merchandise passes to the purchaser. Nevertheless it is important to know that purchasers may avoid liability from this source by including in the contract of sale a clause stating exactly when the title passes to the purchaser. The higher courts have in the past consistently established this rule of law. Thus with this rule of law kept in mind purchasers may importantly lessen their legal liability.

Oral and Written Agreements

It must be remembered by readers that always the intentions of contracting parties are most important, irrespective of the classification of the contract.

For example, in Green v. Doniger, 90 N. E. (2d) 56, it was shown that two parties made a verbal sale contract. After a few months had expired, they signed a written contract which contained a clause to the effect that all verbal agreements were cancelled and the written contract expressed the sole and entire agreement, and that the written contract could not be modified except by writing. Later, in complete disregard of the written contract, the parties agreed orally to modify the written contract.

In subsequent litigation the higher court held that notwithstanding the clause in the written contract which specified that it could not be modified except by written agreement, yet the intentions of contracting parties are controlling and they could verbally or orally agree to cancel or modify the written contract. The court said:

"It is fundamental that a contract must be construed according to the expressed intent of the parties."

Law of Guarantees

Recently a higher court rendered an unusually important decision, establishing law as follows: First, if a seller tells a prospective purchaser that certain merchandise is "designed" to do something, there is no guarantee. Second, if a prospective purchaser inconveniences himself to inspect merchandise after listening



ALTHOUGH THE WRITTEN AGREEMENT USUALLY GOVERNS, MUTUAL INTENT IS THE FINAL TEST

tion of testimony, that the title to the merchandise passed to the purchaser upon delivery thereof to the Cumberland Warehouse. The higher court approved the verdict saying that in event of destruction or damage to the merchandise while it was in the warehouse, the purchaser must suffer the loss. The court

"It certainly would be extraordinary if a warehouseman issued a negotiable warehouse receipt for merchandise to which the person to whose order the receipt was made did not own it. That would be an admirable way for the warehouseman to get into trouble, and the purchaser likewise."

This was so although the testimony showed that the peas were to be repacked by the seller at the warehouse upon later demand of the purchaser. In this respect the higher court pointed out that usually where there is a contract to sell specific goods and the seller is bound to do something to the goods after the sale, the title does not pass to the purchaser until such thing be done. However, in the above case, the court said:

title in the goods is to pass to the buyer:

Where there is a contract to sell unascertained or future goods by description, and goods of that description and in a deliverable state are unconditionally appropriated to the contract, either by the seller with the assent of the buyer, or by the buyer with the assent of the seller, the property in the goods thereupon passes to the buyer. Such assent may be expressed or implied, and may be given either before or after the appropriation is made.

Where, in pursuance of a contract to sell, the seller delivers the goods to the buyer, or to a carrier or other bailee (whether named by the buyer or not) for the purpose of transmission to or holding for the buyer, he is usually presumed to have unconditionally appropriated the goods to the contract. This presumption is applicable, although by the terms of the contract the buyer is to pay the price before receiving delivery of the goods, and the goods are marked with the words "collect on delivery", or their equivalents.

Look at washroom economy from a new angle...

NIBROC® TOWELS

dry drier faster!



Industry uses more Nibrocs than any other paper towel because from every angle they mean real washroom savings...

- 1. They dry drier faster . . . your employees save time!
- 2. One does the job . . . you save towels!
- Soft, lint-free, won't come apart when wet—your employees like them best!
- 4. Nibroc cabinets hold more towels . . . your maintenance costs are less!

All good reasons for you to take another look at your washroom economy and switch to Nibrocs.



Super-Quality Nibroc Tissue is softer because "NIBRO-CRAFTED."* Costs no more than ordinary tissue. Save by ordering towels and tissue together. See your classified directory for nearest Nibroc dealer.

Or write us at Boston - Dept.GN-12-- for samples.

*A unique combination of fibres, exclusive with Brown Company, produced after years of research.

BROWN



COMPANY, Berlin, New Hampshire CORPORATION, La Tuque, Quebec

General Sales Offices:

150 Causeway Street, Boston 14, Mass., Dominion Square Building, Montreal, Que.

For More Information Circle No. 162 on Inquiry Card-Page 17

to the seller's warranties, there is no guarantee. Third, if a purchaser sues a seller for damages, he cannot introduce oral testimory to show or prove that the seller practiced fraud.

For example, in Perry v. Magee, 253 Pac. (2d) 488, the testimony showed facts as follows: A buyer named Perry entered into a conditional sales contract with a seller to purchase a drier for \$5,098.50. \$3,-300.00 was paid down and the balance was to be paid in 11 monthly installments beginning December 1. This contract was made October 3rd. Five months later, on March 3, Perry notified the seller that he was rescinding the contract upon the ground of misrepresentation and breach of warranty of quality, offering to return the machine upon the condition that his money be refunded. The seller did not act and Perry filed suit alleging oral fraudulent representations made by the seller's salesman as to the quality, efficiency and durability of the drier. In this respect the higher court held that Perry could not prove by oral testimony that the seller made false representations since Perry was suing the seller for damages. The court said:

"Parol evidence is admissible to prove fraudulent representations in the procurement of a written contract for the purpose only of recission, but not for damages for fraud."

Buyer Shows Doubt

Further testimony showed that after the seller had represented that the new machine could be successfully used for multi-color operations and that the paper would be moist enough to fold without injury to the paint, Perry was doubtful and took a trip to inspect a machine then in operation. Hence, the court held the seller not liable on a guarantee, and said:

"The respondent (Perry) did not believe these statements and, because of his disbelief, he accompanied Huff (seller) to Seattle to inspect the Marshall machine which was in operation there. No actionable fraud is shown where a party makes his own inspection before the contract."

In other words, a seller never is liable on a guarantee made to a purchaser who did not rely on the guarantee.

Also, the testimony showed that after Perry had returned from inspecting the drier the seller had stated to Perry that the drier and its heating element was "designed" to operate efficiently and satisfac-

torily. In holding the seller not liable on a guarantee, and that Perry must keep and pay for the drier, the court said:

"This is essentially based on respondent's (Perry's) testimony that Huff (seller) represented to him that the new Merco tube was "designed" to remove these difficulties. All the witnesses agreed that the new tube was designed for that purpose."

Relied on Misrepresentation

According to a late higher court decision a seller is guilty of fraud and misrepresentation if the testimony proves that the purchaser relied on any of several misrepresentations.

For illustration, in Wolf v. City Tire Company, 257 S. W. (2d) 408, the testimony showed that one Wolf purchased a used machine which the seller represented to be in "first class mechanical operating condition," and that it had been "through the shop" which meant that all and was in pertect mechanical condition."

Therefore, although Wolf realized that the machine was not in perfect condition, yet he relied on the seller's guarantee that it had been "through the shop". Hence, the seller was liable for this misrepresentation and false statement.

Must Prove Guarantee

Modern higher courts consistently hold that a seller is liable on an implied guarantee that merchandise is reasonably fit for the intended purposes of the buyer, if the testimony shows that the seller knew about these intended purposes. Otherwise a seller never is liable for an implied guarantee.

According to a late higher court decision if a purchaser purchases merchandise to fill a contract with another purchaser whose details are unknown to the seller, the seller can collect the full contract price although the merchandise is rejected by the last purchaser.

AL

aut

occ

ext



WHEN BUYER DOES NOT RELY ON STATEMENTS OF SELLER, HE CANNOT CLAIM MISREPRESENTATION

important repairs were made. Later Wolf discovered that the machine was in poor mechanical condition and that it had not been "through the shop". He sued the seller for damages.

During the trial the seller proved that before Wolf bought the machine he knew that it had certain defects, and that certain parts were not working efficiently.

Nevertheless, the higher court indicated that the purchaser may recover damages from the seller, and said:

"The evidence was that such representations were not true. It is our conclusion that the plaintiff (purchaser) had the right to rely upon the representation that the machine had been through the shop

For instance, in American Foundry v. Milosevich, 263, Pac. (2d) 97, the testimony showed facts as follows: A contractor named Milosevich took a contract from a state to furnish and install soil pipe that would withstand hydrostatic pressure of 50 pounds. A manufacturer of soil pipe wrote Milosevich as follows: "We are pleased to quote you the following on the above material: 1200'...4" S.H.Vic. Soil Pipe ... 70.62 Per Hundred Feet. 1450'...8" S.H.Vic. Soil Pipe... 219.86 Per Hundred Feet."

The contractor purchased enough pipe to fulfill his contract with the state. The pipe furnished to the state by Milosevich did not comply with the specifications. After it was installed it was tested and developed

SUNTAC Hydraulic Oil Cuts leakage 42%, saves \$10,000 a year



A LARGE BEARING MANUFACTURER had hydraulic system trouble. Its automatic chucking machines leaked excessively. Chuck slippage occurred. The result—frequent tool breakage, scrapping of work, extensive downtime, and contamination of the cutting oil.



HEAVIER OILS WERE TRIED in an effort to stop the leakage. Oils of 150, 200, 300 and, finally, 500 viscosity were used, but they failed to solve the problem. When a 500 viscosity oil failed to prevent chuck slippage, they had no alternative but an expensive rebuilding job.



SUNTAC 302 WAS TESTED in several machines that were leaking badly. Accurate records were kept of oil consumption, tool breakage, downtime, scrap, and other pertinent information. These tests proved conclusively that Suntac could control the leakage problem.



SUNTAC WAS ADOPTED for all machines. Results: elimination of all tool breakage due to clutch slippage, saving of 600 to 800 hours downtime, substantial reduction in amount of scrap, and a reduction in oil consumption of 42%. Total savings: over \$10,000 per year.

Remember, Suntac is the hydraulic oil especially compounded to reduce leakage. Special compounding makes the droplets cling together . . . keeps them from leaking through packings and joints. Experience has proved that Suntac will cut leakage an average of 35%. Get complete information about Suntac and other Sun cost-cutting oils and greases from your Sun representative. Or write Dept. PG-12.

INDUSTRIAL PRODUCTS DEPARTMENT SUN OIL COMPANY



PHILADELPHIA 3, PA. • SUN OIL COMPANY LTD., TORONTO & MONTREAL
Refiners of famous High-Test Blue Sunoco Gasoline

For More Information Circle No. 163 on Inquiry Card-Page 17

numerous leaks which Milosevich was unable to repair. Milosevich refused to pay for the pipe and the

manufacturer filed suit.

During the trial the manufacturer testified that he had no knowledge of the specifications of the contract which Milosevich had with the state and that he did not warrant the pipe. Further testimony was given which proved that 4 inch single "Hub Victory" soil pipe and 8 inch single "Hub Victory" soil pipe are descriptive names well known in the trade for pipe intended for use in gravity flow under pressure not in excess of 35 pounds.

\$100 in cash and gave a note to the seller for the balance of \$5,000. The note was negotiable, payable in monthly installments of \$100. Kins refused to pay the note and the seller filed suit to collect \$5,000 from

During the trial Kins proved that at the time the sale of the old equipment was made, the seller orally assured him that he would not be personally liable on the notes. In other words, the note to be paid only from the proceeds derived from the resale of the equipment as junk or salvage. Kins argued that, since the old merchandise had not brought damages can he recover from the

According to a late higher court decision the answer to the first question is yes. This higher court held that the seller can be held liable in damages to a purchaser who was injured as a result of the salesman's deception.

For illustration, in Mark v. Sear, 94 Atl. (2d) 348, the testimony showed facts, as follows: One Mark, a prospective purchaser, told a salesman that he had an area in the rear of his home which was uneven and covered by high grass, weeds and brush, and that he wanted a mower to be used on this uneven ground to cut high grass and brush. The salesman showed him a mower. In answer to a question as to the safety qualities of the machine, the salesman told Mark that it was absolutely safe. Also, the salesman told him that the machine would stop operating if it came in contact with any object that was sticking out of the ground.

Also, the salesman showed Mark some printed matter. In this description of the lawn mower there was a statement "Blade completely shielded." Mark then purchased this lawn mower for \$149.50. He took the machine home, put some gasoline in it, and began to cut the grass in the area behind his home. He had used the machine in the back portion of his property for 15 to 20 minutes when, as he described it, "I was pushing the machine along and it came in contact with a rock and the machine bounced back, and as it bounced back it cut through my

In subsequent litigation the lower court held the seller not liable in damages to Mark but the higher court reversed the verdict, saying:

-AND THAT *!! * SALESMAN TOLD ME IT HAD AUTOMATIC SAFETY FEATURES

MODERN COURTS AWARD HEAVY DAMAGES FOR PERSONAL INJURIES FROM DEFECTIVE EQUIPMENT

Milosevich contended but did not prove that the manufacturer had knowledge that his contract with the state required pipe which would withstand pressure of 50 pounds and therefore the manufacturer was liable on an implied guarantee. As Milosevich failed to prove this contention, the higher court held that Milosevich must pay the manufacturer for the pipe, and said:

Note Is Collectable

"There was evidence that "Victory soil pipe" was a term used as descriptive of the wall thickness of pipe, and that the lighter pipe has been thus described since 1941 and 1942. The court was warranted in concluding that plaintiff (manufacturer) furnished defendant (Milosevich) with the pipe ordered, namely, Victory soil pipe of weight and thickness which was customary in the trade. It is of no moment that the pipe did not meet the requirements of the contract with the state."

For comparison see Kins v. Garner, 261 S. W. (2d) 266. These facts were established: A dealer sold to a purchaser named Kins, for \$5,100, old equipment that had little value except as scrap. Kins paid \$5,000 as junk, he need not pay the

The lower court held Kins not bound to pay the \$5,000 note, but the higher court reversed the verdict, and said:

"It has been a characteristic of negotiable instruments that they are not to be encumbered by collateral conditions. The parol agreement relied upon was ineffective as a matter of substantive law."

Therefore, the law is established that a negotiable note is collectable irrespective of oral or verbal agreements made by the maker to the contrary. Readers interested in similar suits should read higher court cases, as follows: Smith v. Mc-Laughlin, 179 S. W. 496; Page v. Oates, 109 S. W. (2d) 661; Fee-Crayton Hardwood Lbr. Company v. Hogan, 143 S. W. 585; Harmon v. Harmon, 199 S. W. 553.

Mower Injures Purchaser

A reader asked this question: "Is a seller liable for statements and guarantees made by his salesman as to the safety and efficiency of merchandise? If the purchaser is injured by defective merchandise what

Heavy Damages Awarded

"We think that a prima facie case was made out of breach of the express warranty that the machine was safe and would cease operation upon hitting an obstruction. From the testimony a jury could legitimately find that there was a breach of this warranty in that the blade did not stop revolving and the machine did not stop operating when it hit the rock; and further that the failure of the blade to stop revolving when it hit the rock caused the machine to bounce back as it did and injure the plaintiff (Mark)."

I shall review a few late higher court cases giving information as to amounts now generally allowable to injured purchasers, as follows:

In Denny, 101 Fed Supp. 735, the



TESTS EXCEEDING 30 YEARS' USE* SHOW ON-OFF CYCLING STILL 100%

... with G-E Temperature-controlled Ignitrons!

WELDER USERS: you cannot match this proved long-life dependability anywhere in the field of water-regulated ignitrons! Add these General Electric tube plusses:

Instant-operating thermostat and switch that guard against ignitron overloading and burnouts. There is no metal linkage between cylinder wall and thermostat to cause a dangerous time-lag through thermal inertia.

Equally fast switch reset when a temperature reduction of only 4 or 5 degrees has occurred. Means quick return of welders to service...less production time lost.

Precision temperature control. Reference point for thermostat is the average heat of tube inner cylinder wall—not temperature of a single small area of the wall which might be a cold or hot spot.

High operating limits of G-E ignitrons permit their use at full ratings... without tripping... at any reasonable circulating-water temperature. Your welders stay in service with a minimum of interruptions.

G-E Temperature-controlled Ignitrons are the most efficient welding tubes you can buy. Tremendous water savings (95% and better) ... fast and dependable switch-off when burnouts threaten! Life equals or exceeds that of standard G-E ignitrons.

You receive tube and controls in one integrated unit, built throughout by G. E., carrying full G-E warranty, with a single manufacturer's responsibility to back up the product.

Get the complete story from your G-E tube distributor! General Electric Company, Tube Department, Schenectady 5, New York.

G-E Temperaturecontrolled Ignitrons for welding include: GL-6346 . . . Size B. Will replace GL-5551/FG-271.

GL-6347 . . . Size C. Will replace GL-5552/FG-235-A.

GL-6348 . . . Size D. Will replace GL-5553/FG-258-A.

Progress Is Our Most Important Product

GENERAL ELECTRIC

For More Information Circle No. 164 on Inquiry Card-Page 17

higher court allowed an injured person \$80,000 damages. The testimony showed that he was 40 years old, in excellent health at the time of the injury which crippled him for life, and he was compelled to wear a brace.

In Blew v. Atchison, 245 S. W. (2d) 31, the higher court awarded \$50,000 damages to a person who was 33 years old and earning \$375 per month. His injuries were permanent but not total disability.

In Pinter v. Gulf, 245 S. W. (2d) 88, the higher court awarded \$40,000 damages to a 41 year old man who was earning \$3,000 per year at the time of the injury. He suffered pain and is required to wear a sacroiliac girdle, and he never can perform manual labor.

In Fortner v. St. Louis, 244 S. W. (2d) 10, the higher court awarded a purchaser \$35,000 damages for an injury which necessitated amputation of four toes, and his leg was permanently slightly deformed.

In Roy v. Chicago, 102 N. E. (2d) 752, a salesman was awarded \$35,000 damages for permanent injuries to his leg which interferred with his walking.

In Kress v. Newark, 86 Atl. (2d) 185, the lower court allowed \$90,000 damages to an injured person. The higher court somewhat reduced the damage allowance, as the testimony showed that the person's earning capacity would not be reduced by the injury.

In Surplus v. Renfro, 246 S. W. (2d) 293, the higher court awarded \$15,312.75 damages to a man for a lost thumb.

Law of Agency Contracts

During the past months I have received several inquiries relative to the liability of manufacturers who cancel agency contracts. Recently, the higher courts rendered important decisions on this law. For the benefit of all readers I shall briefly review these new cases.

A reader wrote as follows: "Eight months ago I signed a contract with a manufacturer to distribute and sell his merchandise in a specified area near here. This contract gave me exclusive agency of the manufacturer's merchandise in this area. That was important to me because, although this manufacturer's merchandise was not well known, I felt I could afford to devote time and expense in introducing it to my customers. The contract stated that either of us could cancel the contract at any time by giving 30 days notice. I spent a great deal of money and time in developing and selling

this merchandise in this territory and also purchased a great deal of the manufacturer's merchandise for stock. Then the manufacturer notified me that my contract would be cancelled in 60 days from the date of his letter. What are my legal rights in this matter?"

The answer is: The manufacturer must pay you a sum of money which a jury may decide you have earned. The courts hold that a distributor's or seller's contract cannot at once be cancelled by a maufacturer if the testimony shows that the distributor or seller acted in good faith and expended time and money in developing the manufacturer's product in anticipation of reasonable profits. This is so although the contract between the manufacturer and seller gives the manufacturer the absolute right to cancel the contract at his convenience.

The Right to Cancel

For example, in Fargo Company v. Globe, 161 Fed. (2d) 811, the testimony showed these facts: A manufacturer and a purchaser signed a written contract which stated that the contract could be cancelled at any time by either party. The contract further recited that the pur-

party to the contract was privileged to cancel the contract.

The purchaser sued the manufacturer contending that under the circumstances it had no right to cancel the contract, although the contract contained a clause to this effect.

After considerable consideration the higher court held in favor of the purchaser, stating that where a purchaser incurred expense and devoted his time and labor to an "exclusive agency" contract and was not given by this seller a reasonable opportunity to recoup his expenses in introducing the manufacturer's merchandise, he is entitled to damages from the manufacturer, although the contract clearly provides that the manufacturer can cancel the contract at anytime. The court said:

"The acts performed by the plaintiff (purchaser) including the obtaining of the 2,500 sales orders, and the cancellation of the contract before the plaintiff (purchaser) had a chance to recoup any of the expenses incurred were facts which showed that the plaintiff (purchaser) was entitled to some relief."

For comparison, see Bendix, Inc. v. Accessories, 129 F. (2d) 177. In this case the testimony showed that



WHEN AN AGENT UNDER CONTRACT ACTS IN GOOD FAITH,
THE COURTS WILL PROTECT HIM AGAINST LOSS THROUGH
ARBITRARY CONTRACT CANCELLATION

chaser was to sell the manufacturer's merchandise in a designated area. The purchaser immediately ordered and paid for one-half the specified quota for the area mentioned in the contract and then spent his time, effort and money to sell and introduce the manufacturer's products in this area. Notwithstanding these facts the manufacturer cancelled the purchaser's contract in a letter sent by mail and based on the contract clause that either

the purchaser had done nothing to sell the manufacturer's product in reliance on an exclusive agency. The court held that the manufacturer or seller could cancel the contract exactly in accordance with the terms of the contract. This court said:

"Where the unrestricted right of cancellation is reserved to one or both parties, contracts are binding only to the extent that they have been performed."

Satisfaction rests on the cartons





They protect your product. They guard your reputation.

CORRUGATED CONTAINER DIVISION • Box Plants: Savannah, Ga., Trenton, N. J., Chicago, III.

Eastern Division Sales Offices: 1400 E. State St., Trenton 9, N. J. • Southern Division Sales Offices: P.O. Box 570, Savannah, Ga.

Western Division Sales Offices: 4545 West Palmer, Chicago 39, III. • Executive Offices: Woolworth Bldg., New York 7, N. Y.

INTEGRATED

TRADE MARK

INTEGRATED

New Products deas



You can get more information on any new product shown in this section. Just check the number that follows each item and circle the corresponding number on the Inquiry Card, page 17. Drop the card in the mail and we'll do the

Socket Screw is Vibration-Proof. Leak-Proof



It is claimed by the Safety Socket Screw Co., 6501 Avondale Ave., Chicago 31, Ill., that its newest socket screw withstands loosening and leaking under the most severe operating conditions. It has been submitted to exacting laboratory tests for shock vibration and leakage of oil, air and water. Included in the tests were hydraulic pressures up to and above 6000 psi, all of which were successfully negotiated. Design of the screw includes a tapered chamfer shoulder, beneath which is pre-assembled a half-inch lead washer

Circle No. 42 on Inquiry Card-Page 17

Die Stacking Truck

A platform-type stacking truck is being introduced by Lewis-Shepard Products, Inc., Watertown, Mass., for stacking dies weighing up to 7500 lb in storage racks and for transporting the dies from the storage area to the press beds. It is equipped with a hydraulic die pusher and puller. The platform has an effective length of 42" and a width of 32". The pushing plate has a stroke of 42" so it is capable of pushing the dies completely off or pulling them completely onto the platform. The lowered height of the platform is 15" and the raised height 54". The truck will right-angle stack in an aisle only 7' wide.

Circle No. 43 on Inquiry Card-Page 17

Drill Press Speeds Production



A 14-inch drill press, designed to speed production, reduce operator fatigue, and facilitate precision work is announced by Delta Power Tool Div., Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa. A new streamlined full length belt guard hinged at the rear is counterbalanced, enabling the guard to be swung out of the way and suspended in that position automatically. This facilitates cleaning and belt changes. A modified quill on the new machine allows 5-5/16 in. travel, compared with 4 in. on old machine.

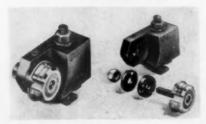
Circle No. 44 on Inquiry Card-Page 17

Locates Surface Defects in Rough Castings

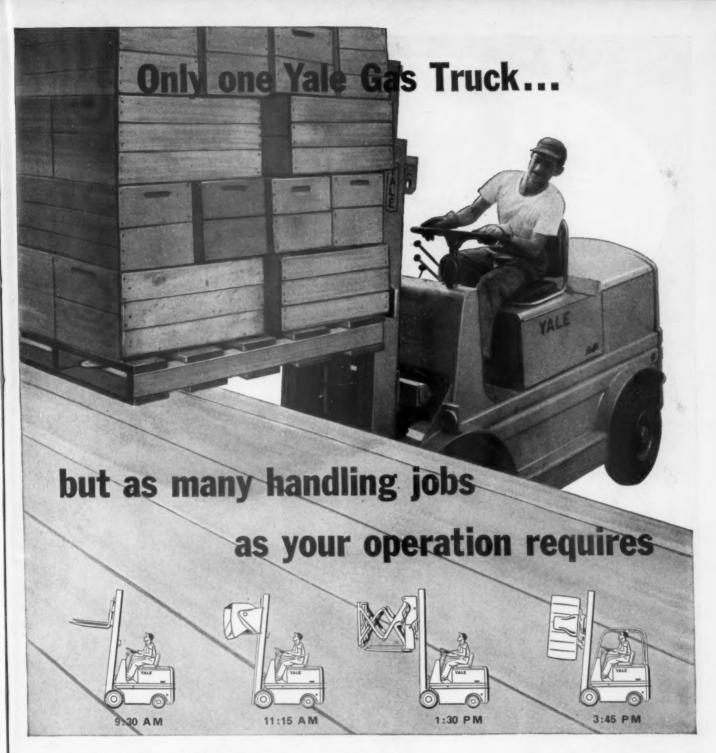
magnetic-particle test unit, called Portaflux, weighs only 45 lb. and is easily carried into confined spaces to locate surface defects on rough castings. It is useful for examinations at various stages of production or as a maintenance tool. Objects to be checked are magnetized either by passing a current directly through the metal or through a surrounding cable in the form of a coil. Magnetic iron oxide or precipitated iron powder is distributed over the surface of the magnetized object and alignment of the particles is such that the defect is clearly located. It is a development of Research & Control Instruments Div., North American Philips Co., Mt. Vernon, N.Y.

Circle No. 45 on Inquiry Card-Page 17

Cross-Side Tool Post Uses **Less Costly Form Tools**



An adaptable cross slide tool post is designed to eliminate the conventional hook clamp which holds the (Please turn to page 132)



Versatile is the word for time-and-money-saving YALE Gas Trucks. No matter how many lifting jobs you contend with . . . remember YALE interchangeable attachments make it easy for one YALE gas truck to perform a variety of handling jobs daily. And do it faster—safer—at less cost.

Yale Electric Trucks lead the field, too. Do everything, the Gas Trucks do . . . can be fitted with all YALE attachments, besides being efficient, economical and trouble-free. Capacities to 100,000 lbs. And before you buy any electric truck, look into the big news about YALE's new Safety Silhouette Electric Truck—with exclusive safety features you've never seen before!

YALE

*Reg. U. S. Pat. Off.

INDUSTRIAL LIFT TRUCKS AND HOISTS

Write for further information to The Yale & Towne Manufacturing Company Philadelphia 15, Pa., Dept. 2512

Gas, Electric, Diesel & LP-Gas Industrial Trucks . Worksavers . Hand Trucks . Hand & Electric Hoists . Pul-Lifts

Nobody likes a

dirty wiper

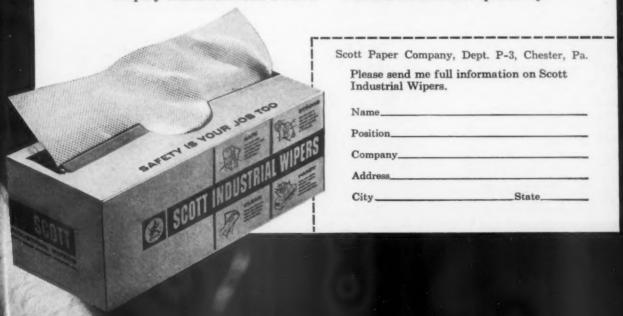
...Another good reason for switching to Scott Wipers!

Because a clean, fresh one is always available—Scott Wipers provide a constant source of clean chip-free wiping material.

Scott Wipers are sanitary and disposable. They greatly reduce the costly scratches and digs in finished work caused by chips lodged in wiping materials. They end the laundering problem and simplify distribution and control.

Scott Industrial Wipers are twoply and tough yet soft and absorbent. Compare them with whatever wiping material you're using now —for cost, for convenience, for performance.

The Scott representative or distributor in your area will be glad to help you set up a production line demonstration in your plant. Call him or mail this coupon today.



For More Information Circle No. 167 on Inquiry Card-Page 17

For Stampings

...look for the PLUS

beyond

the PRICE!



Ever think what it costs when the stampings you ordered keep falling below your specified AQL? Steady unvarying conformance with AQL requirements, with minimum rejects - established over an excellent 39-year record - is just one of many plusses you get when you buy Detroit Stampings. Look for the Plusses beyond the price the next time you

And be sure to try DETROIT

buy stampings!

DETROIT STAMPING COMPANY

408 Midland Ave., Detroit 3, Mich.

"America's Best-Known Jobbing Stampings Manufacturer"

> For More Information Circle No. 168 on Inquiry Card-Page 17

(Continued from page 128)

form tool. Pin holes are not required since a special adapter ring is provided. The special screw adjustment provides more positive and accurate setting of the cutting edge, while at the same time permitting greater clearance. Provision is also made for squaring the tool with the work. As a result, circular form tools for #00 machines may be used on #0 or #2 machines and #0 tools on #2 machines. This saves on both original tool cost and inventory. The tool post is made by The American Cam Co., Hartford 1, Conn.

Circle No. 46 on Inquiry Card-Page 17

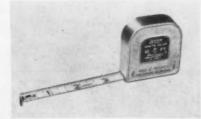
Fuse Cutouts Have Flexible **Applications**



A completely new line of enclosed fuse cutouts, with all operating functions available in one basic design, is announced by General Electric Co., Distribution Dept., Pittsfield, Mass. Flexibility of application has been achieved in the cutouts by means of one housing and four interchangeable doors in each voltage and current rating. The cutouts are currently available in voltage ratings of 5.2 kv and 7.8 kv in continuous current ratings of 50 amp and in all applicable NEMA interrupting current ratings.

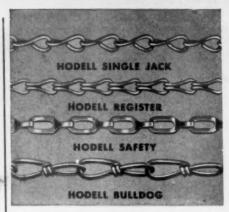
Circle No. 47 on Inquiry Card-Page 17

Tape Rule



The Lufkin Rule Co., Saginaw, Mich., has on the market a new tape rule. The blade is finished in pure white with bold black figures and black graduations. It is coated with a clear abrasion-resistant plastic to resist wear. It also has a self-adjusting end hook, which assures accurate hook over and butt end

(Please turn to page 136)



CHAIN

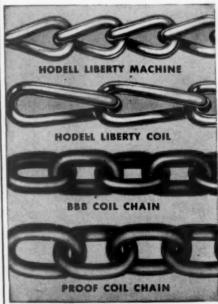
for every purpose

When you buy chain...be sure to buy from the quality line of Hodell Chain that includes types and sizes for every industrial use. Hodell also manufactures many formed wire specialties and can make chain assemblies to your specifications. Hodell welcomes the opportunity to quote on your requirements. Write for the Hodell Chain catalog, giving complete information.

HODELL CHAIN COMPANY

Cleveland 3, Ohio

Div. of The National Screw & Mfg. Co.



For More Information Circle No. 169 on Inquiry Card—Page 17
For More Information Circle No. 170
on Inquiry Card—Page 17→



Why it pays to specify The Leading Brand OU SAVE three important ways when you specify Tube-I TURN Welding Fitting and Flanges. (1) You get the most advanced products available . . . assured by Tube Turns' pioneering research. (2) You get the exact fitting and flange for your problem promptly because Tube Turns has the world's most complete line . . . available nearby. (3) You get piping ideas through the outstanding Engineering Service and how-to-doit information of Tube Turns.

These money-saving extras are yours when you specify "TUBE-TURN". Call your nearby Tube Turns' Distributor.

The Leading Manufacturer of Welding Fittings and Flanges

DISTRICT OFFICES: New York . Philadelphia . Pittsburgh . Claveland . Chicago . Denver

San Francisco . Seattle . Atlante . Tulsa . Neusten . Bellas . Midland, Texas



WHY IT PAYS
TO DO BUSINESS
WITH THE
LEADER



Tube Turns' nearby complete stock SAVES YOUR PURCHASING



Tube Turns' pioneering research GIVES YOU ADVANCED PRODUCTS.





Tube Turns' engineering help GIVES YOU COST-CUTTING IDEAS.

Looking for more for your money?

HERE'S HELP ON PIPING PROBLEMS!

You can make piping dollars go further by doing business with your Tube Turns' distributor. For it is through this nearby source that you have access to the world-famous Engineering Service Division of Tube Turns. The help of its experienced engineers often saves thousands of dollars in piping costs.

You get this service and other important plus values only when you purchase TUBE-TURN* Welding Fittings and Flanges. Your Tube Turns' distributor has the world's most complete line to match your needs and save your time.

The Leading Manufacturer of Welding Fittings and Flanges



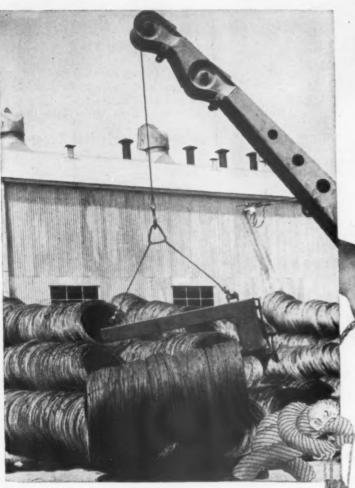
* "ta" and "TUBE-TURN" Reg. U.S. Pat. Off.

TUBE TURNS

LOUISVILLE 1,

A DIVISION OF NATIONAL CYLINDER GAS COMPANY

DISTRICT OFFICES: New York • Philadelphia • Pittsburgh • Cleveland • Chicago • Denver • Tulsa
Los Angeles • San Francisco • Seattle • Atlanta • Houston • Dallas • Midland, Texas



Do Your Worst To This FREE

Tuffy

LOOP IT! JERK IT!

Tuffy HOIST LINE

Here's A Twin To Tuffy Slings that's specially designed to match their strength and wearability! Tuffy Hoist Line gives you more safety from drum to sling and built-in service life to handle more loads.

No Chance For Ordering Mixups because there are no complicated specifications! Just tell your distributor the length, diameter and "Tuffy Hoist Line." Try Tuffy, whether you use overhead, stiff leg or mobile cranes, derricks or clamshells!

Your **Tuffy** Distributor Stocks Against Your Requirements

When You Need Replacement Rope, you often need it fast. And that's where your Tuffy distributor comes in handy. Give him an idea of your requirements and he will stock ahead of your replacement schedules from his nearby mill depot. Give him a call now!



Specialists in High Carbon Wire, Wire Rope and Braided Wire Fabric

You Prove How Tough Tuffy Slings actually are... to your complete satisfaction... with the 3-ft. Tuffy Sling we give you! We're convinced you'll say it's stronger, more flexible, more economical than any sling you've ever used. Here's why:

Tuffy Slings Are Made in a 9-part machine-braided wire fabric construction that's extra flexible to resist kinking. If you do succeed in putting a kink in it, see how easily your Tuffy Sling straightens out with no material damage.

Proof-Test Tuffy Up To Twice its rated working load. Prove to yourself that Tuffy Slings are the toughest in the business!

TEAR OFF AND MAIL COUPON NOW

Union Wire Rope Corporation

2282 Manchester Ave., Kansas City 26, Mo..

At no cost or obligation to me, please rush the material I have checked:

- FREE 3-Ft. Tuffy Sling!
- FREE Sling Handbook and Rigger's Manual, Featuring 12 Tuffy Factory-Fitted Types!
- ☐ Name and Address of Tuffy Distributor Nearest Me!

FIRM NAME_

BY____

TITLE

ADDRESS_

CITY___

ZONE STATE



(Continued from page 132)

measurements. Graduations are in consecutive inches to 16ths on both edges with the first six inches of upper edge graduated to 32nds. It is furnished in four lengths, 6, 8, 10 and 12 foot.

Circle No. 48 on Inquiry Card-Page 17

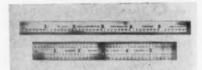
Chippers' Goggle Has Three-Way Ventilation



The problem of preventing lensfogging is attacked from three different angles in a new model chippers' goggle, manufactured by the Pennsylvania Optical Co., 234 S. Eighth St., Reading, Pa. In addition to the usual perforations in the side shields, the goggle is constructed to provide extra ventilation to the inner lens surfaces through slots in the lens retaining rings and channels in the lens seat area. Also, ventilation is provided through wide channels between the lens retaining rings and cupwalls. A metal reinforcing ring, moulded into the inner rim of each cup, insures retention of original cup thread dimensions under all conditions.

Circle No. 49 on Inquiry Card—Page 17

Steel Rules with No-Glare Finish



L. S. Starrett Co., Athol, Mass., announces steel rules with no-glare satin chrome finish. The rules are easy to read at any angle, in any light to eliminate evestrain and help avoid errors. The finish also resists moisture, acids, perspiration, rust and stains. There are two models: No. C309R, a 6 in. flexible rule, has 16ths graduations on one edge and 32nds and 64ths graduations on the other edges; No. C604RE model, available in 6 in. and 12 in. lengths, is a spring tempered rule with the 8ths and 16ths graduations on two edges and quick reading 32nds and 64ths graduations on the other two edges. In addition both ends of one side have 32nds graduations for measuring in close quarters.

Circle No. 50 on Inquiry Card-Page 17

Air Conditioning

BUILT AND BACKED BY GENERAL MOTORS

Refrigeration

Ice Cube

Makers

Which is the CleCap?

...the one that's always ready for you

> We're never "out of stock" on any of the popular sizes in High Carbon Heat Treated Cap Screws-CleCap's pride and joy among tough dependable hex head screws.

> One thing you'll soon learn when you deal with CleCap—as cap screw specialists, we haven't so many irons in the fire that we can't keep our production well balanced and maintain stocks to meet demands. And we make it a point to stock many sizes and lengths not commonly listed.

> It's good business to use these extra tough 1038s. And it's good business to order them from the hustlers at CleCap-or from one of the many efficient CleCap distributors.

Approximate Tensile Strength* (Lbs. per Sq. In. Minimum)

Stock screws are double heat treated to SAE Grade 5 physical properties

Up to 34" dia. inclusive	0				120,000
Over 34" to 1" dia. inclusive.					115,000
Over 1" to 11/2" dia. inclusive				0	105,000

*Based on mean thread area.

The Cleveland Cap Screw Co.

2922 EAST 79th STREET . CLEVELAND 4, OHIO

VU Ican 3-3700 TWX CV42

Warehouses: Chicago • Philadelphia • New York • Providence • Los Angeles

CLEVELAND Jop Quality FASTENERS

Ferrous and Non-Ferrous: Bright, High Carbon and Alloy Steel Heat Treated, Brass, Silicon Bronze, Stainless Steel

Hex Head Cap Screws - 1/4" to 21/2" Set Screws - Square Head - 1/4" to dia.

cket Head Cop and Set Screws—Plain and Knurled: ¼" to 1½" dia. Also Flat and Button Head

Milled Studs - 1/4" to 11/4" dia. Place Bolts - 1/4" to 11/4" dia.

Flat Head Cap Screws-1/4" to 1" dia.

Structural Bolts to ASTM Specification
A325

Tractor Bolts Fillister Head - 4" to 14" dia.

Special Hot and Cold Headed Parts

Facilities to make larger diameters than listed

Ask Your Jobber for CleCap!

Originators of the Kaufman

DOUBLE VIRUSION Process

For More Information Circle No. 173 on Inquiry Card-Page 17 DECEMBER, 1954

For More Information Circle No. 174 on Inquiry Card—Page 17→

137

G-E MANUAL STARTERS GIVE MAXIMUM

INSULATED BASE.

The starter' molded insulated base provides maximum protection from grounding. Barriers to isolate contacts and reduce arcing are made from hot molded material which doesn't absorb moisture. They have sufficient protection against arc-overs, and also act as mounting supports for the switch.

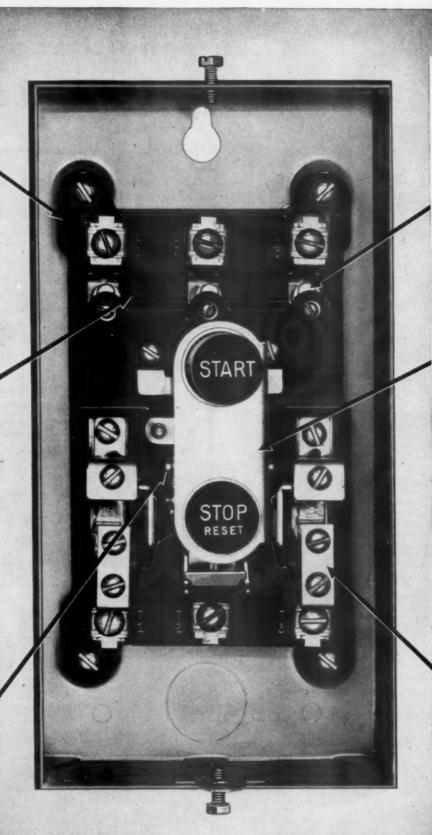
Arcs are completely confined, even with maximum horse-power and stalled rotor current, in deep insulated wells. This feature provides a high safety factor by reducing the possi-

ARC PROTECTION.

reducing the possibility of arc-over between adjacent contacts and results in increased contact life.

SAFE FROM VIBRATION. The snapaction switch mechanism is built so it cannot accidentally trip from machine vibration.

Both push button and lever types help protect against inadvertent operation. Guard on toggle-type switch cover prevents accidental tripping, yet is large enough for operation by a gloved finger. The handle guard provides a means for padlocking switch in either ON or OFF position. For fractional horsepower motor switches, a new handle guard incorporating these safety features is available.



SPLIT-SECOND
BREAK. Operating
mechanism is
spring-loaded for
split-second breaks
which reduce possible arcing and
contact freezing.
Made of fine silver,
contacts give years
of make and break
operations. Large
contact surface assures positive contact on make.

TRIP-FREE MECHAN-ISM. On G-E manual starters, operating mechanism trips free on overload, opening the contacts. This action makes it impossible for the switch to be held closed under injurious overload conditions. Visual in-dication is given by the lever or push button in the neutral position.

NO INJURIOUS OVERLOADS. Bimetallic overload relays allow your motor to deliver maximum power without premature tripping, yet help protect against overloads and stalled rotor conditions. positive protection helps prevent damage to the motor due to heating. Bi-metallic overload relays, unlike the solder-pot type, can be mounted in any position. Easily installed heaters are available in all ratings.

PROTECTION

Maximum protection, inside and out, is provided by G-E manual starters. In addition to the features illustrated at left, protective devices have been built into the enclosure itself. Provision has been made for padlocking starter cover (toggle types may also be padlocked in ON or OFF position) to help protect personnel.

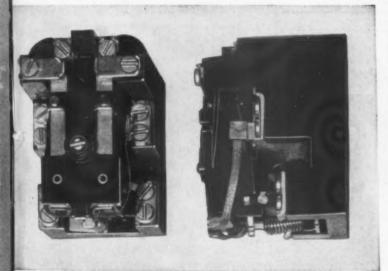
ADDITIONAL FEATURES of G-E manual starters include front-connected, clamp-type terminals; straight-thru wiring; general purpose, water-tight, dust-tight and explosion-proof enclosures; clearly marked line and load terminals; and operating mechanisms that are replaceable as units.

FOR MORE INFORMATION contact your nearest G-E Sales Office, or Distributor, or write Section 730-54, General Electric Company, Schenectady 5, N. Y. Ask for Bulletin GEA-1522.

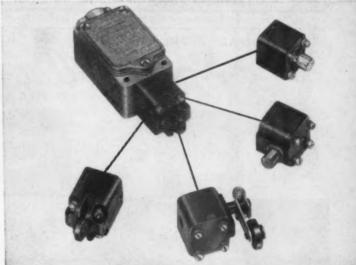


EASILY ACCESSIBLE MOUNTING KNOCKOUTS in top, sides, bottom and back of case simplify installation. Knockouts are punched for ½ or ¾ inch conduits. Straight-thru wiring, adequate wiring space and saddle-type clamping terminals make wiring easy.

DEPENDABLE RELAYS, LIMIT SWITCHES FOR VARIED APPLICATIONS



Small size, general-purpose relays are high current rated. Both a-c and d-c forms are available in ratings up to 300 volts. The new, strong, long-life shunt assures dependable relay performance.



Compact, track-type limit switch has four interchangeable heads: roller lever, side pushrod, top pushrod, and roller pushrod. Heads mount in any of four 90-degree operating positions.

CHOOSE FROM THE COMPLETE GENERAL-PURPOSE CONTROL LINE

















MANUAL STARTERS - MAGNETIC STARTERS - PUSH BUTTONS - COMBINATION STARTERS - RELAYS - REDUCED VOLTAGE STARTERS - SOLENOIDS - LIMIT SWITCHES

GENERAL



NEW

INLAND-UNION AUTOMATIC IRE TYING MACHINE

Especially suited for bundle tying of knocked down corrugated or fibre containers, wood products, books, magazines, newspapers, etc.

SPECIFICATIONS

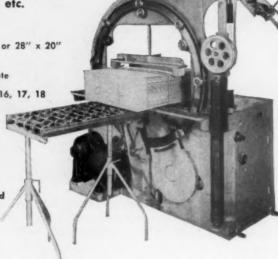
- Bundle size—Max. 36" x 16" or 28" x 20"
 Min. 10" x 2"
- Tying rate-Max. 26 per minute
- Wire Gauge Range-14, 15, 16, 17, 18
- Tying of Wire—Galvanized of tying quality — Min. tensile 60,000 PSI.

Easy to operate and maintain

Low cost operation

Less operating parts as compared to competitive machines

Ask for complete data



INLAND WIRE PRODUCTS COMPANY

3942 South Lowe Avenue Chicago 9, Illinois

For More Information Circle No. 175 on Inquiry Card-Page 17

IT'S A SMART MOVE TO ORDER

Special Washers



6400 PARK AVENUE • Diamond 1-1740 • CLEVELAND 5, OHIO
For More Information Circle No. 176 on Inquiry Card—Page 17

Resincid Wheel Increases Grinding Safety



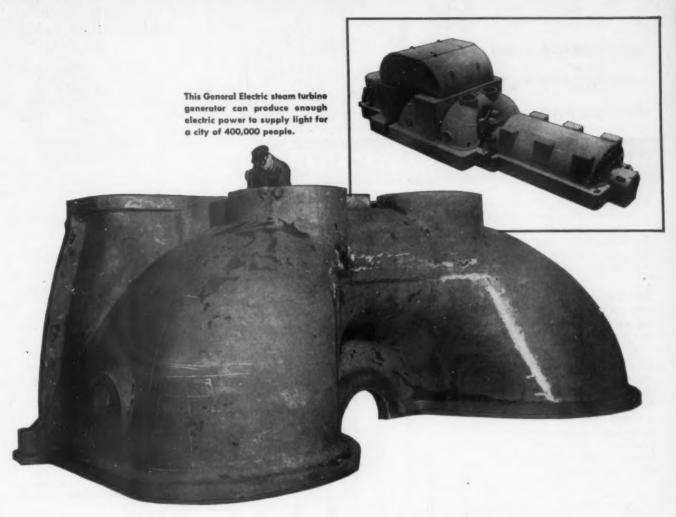
Two rings embedded directly in the usable portion of resinoid grindwheels, manufactured Colonial Abrasive Products Co., Conshohocken, Pa., for their portable grinders are stated to add greatly to the safety factor. The rings have greater tensile strength than steel but at the same time will abrade away during the normal cutting of the wheel without interference with cutting action. This makes it possible to reinforce the wheel where reinforcement is most needed. Cracked wheels have been run up to 20% above normal operating speed without the wheels exploding. Circle No. 51 on Inquiry Card-Page 17

Truck Simplifies Handling of Dies, Heavy Objects



A 4000 lb capacity industrial truck facilitates handling of dies and other heavy objects. The die handling platform of the truck is 36" x 36" with triple rows of rollers 21/4" in diameter. A pull-lift type winch, operating twin hooks, pulls dies off or on roller platform. The forward end of the truck's frame is supported by two stabilizer caster wheels and is articulated so that the drive wheel will maintain contact with the floor, regardless of floor variations. Overall height of the truck is 68", maximum telescopic lift, 931/2". Manufacturer is the Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Circle No. 52 on Inquiry Card-Page 17



Chateaugay Pig Iron Used In Casting 55-Ton Exhaust Hood

Castings like this huge turbine exhaust hood are produced regularly by General Electric.

Their foundry specifications are strict. To meet these requirements they use only the finest pig irons in their cupola mixture—including Republic Chateaugay.

Many casting producers use Chateaugay iron to obtain high strength, uniformity and machinability throughout every casting. Chateaugay castings have an unusually fine and uniform grain structure, and surfaces with high wear-resistance.

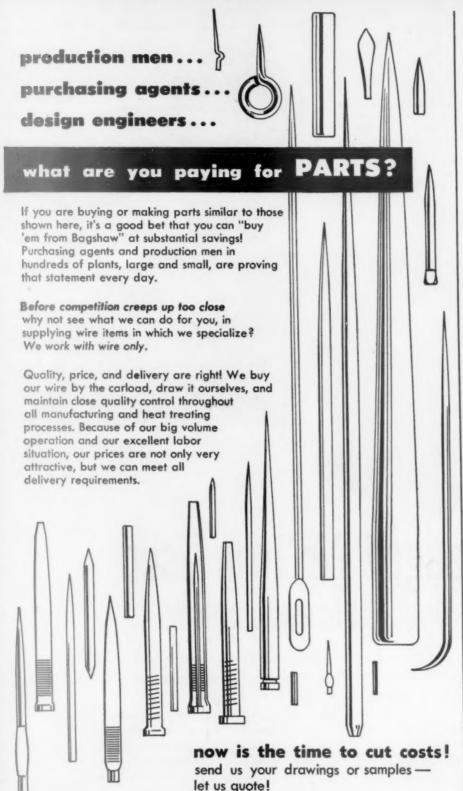
In addition, Chateaugay castings machine easily and economically.

For the complete story on Chateaugay, the low-phosphorus, copper-free pig iron, call in a Republic Pig Iron Metallurgist. There is no cost or obligation for his services. Let us know when you would like him to call.

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N.Y.



For More Information Circle No. 177 on Inquiry Card-Page 17



W. H. BAGSHAW CO., Inc., 55 Pine St., NASHUA, N. H. Established 1870

Oldest and largest plant of its kind in America.

for pointed, square-cut, or formed wire goods

'em from BAGSHAW

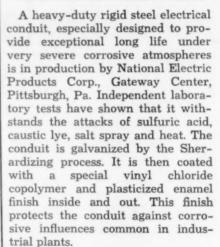
For More Information Circle No. 178 on Inquiry Card-Page 17

Free Spinning, Reusable Nut Locks, When Seated



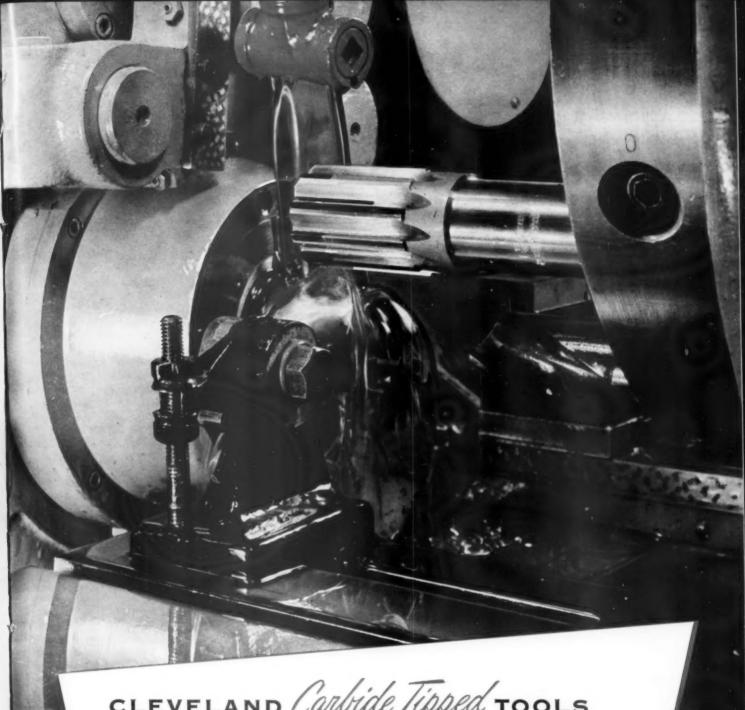
The Jacobson Nut Mfg. Corp., Kenilworth, N. J., is currently manufacturing a one-piece, free spinning, reusable nut, which locks itself when seated. The upper portion of the nut is slotted and the bottom face is undercut. Therefore, when the nut is tightened, the threaded segments move inward causing the nut to produce a vibration-proof lock on the threads of the screw. It is stated that, due to automation of production, these nuts will cost less than similar type nuts. Circle No. 53 on Inquiry Card-Page 17

Electrical Conduit Resists Corrosive Atmospheres



Circle No. 54 on Inquiry Card-Page 17

If the copy of PURCHASING received in your department is a busy one, it would pay you to have additional copies available for your purchasing staff. Copies, easily accessible when needed, will save time and money. The ideas alone derived from PUR-CHASING Magazine will more than pay the small investment of \$4.00 for a yearly subscription.



CLEVELAND Carbide Tipped Tools

Reamers . Drills . Counterbores . Special Tools

These superior tools retain a sharp edge under high temperatures and have excellent resistance to abrasion. Additional tool life and economy result from the use of the best hardened high speed steel bodies.

THE CLEVELAND TWIST DRILL CO.

1242 East 49th Street Cleveland 14, Ohio Stockrooms: New York 7 . Detroit 2 . Chicago 6 . Dallas 2 . San Francisco 5 . Los Angeles 58

E. P. Barrus, Ltd., London W. 3, England



Request your copy of this descriptive new booklet on CLEVELAND Carbide Tipped Tools

TELEPHONE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR

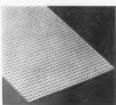
If you use protective packaging of any type, in any quantity . . .

LOROCO OFFERS YOU SPECIAL ADVANTAGES!



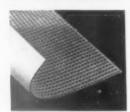
LORODENT PACKING PADS

Prevent scratches, scrapes . extra strong, flexible, shock-absorbing. Your choice in number of plies, type of outerwrap.



IMPROVED INTERLEAF LORODENT

Perfect internal packaging for nesting fragile and expensive merchandise. Also makes a good protective covering for highly polished and easily marred surfaces.



LINED FLEXIBLE LORODENT

Lined wall gives added strength, springier texture. Ideal for packaging a wide range of products, from baby bottles to water heaters. Makes fine self package, too. Available in rolls, sheets, sleeves, tubes.

See how LORODENT can save you time...money!

COMPLETE LINE. There's a Lorodent protective material to fit your packaging needs exactly. Compare and choose from the complete Lorodent line . . . all ideal materials for packaging a wide range of products. Fill your needs quicker, easier, from one supply source. Combine shipments to earn lower rates.

REALLY COMPETITIVE PRICE. Because of these added features, you may imagine Lorodent expensive. Far from it! Prices are most moderate, extremely competitive. All we ask is the chance to prove to you how really competitive Lorodent prices are!

Find out today how you can give your merchandise maximum protection at minimum cost with Lorodent Packaging Materials.

Write, wire or phone for samples and prices.

PACKING PADS . LINED FLEXIBLE LORODENT . IMPROVED INTERLEAF LORODENT

READING, CINCINNATI 15, OHIO INDUSTRIES, INC. • For More Information Circle No. 180 on Inquiry Card-Page 17

Low Maintenance a-c Welders



A line of industrial, low maintenance, a-c welders for high speed production features stepless current control, silicone insulation and aluminum coil windings. The welders are equipped with a large current scale, which the operator can read a considerable distance. Fingertip current adjustment and quieter operation are made possible by the coil supports which float in a rubber bushing. Wide current ranges on the new welders (38-375 on the 300 amp model, 52-500 on 400 amp and 65-625 on 500 amp) enable them to be used on applications ranging from light-duty, low current, to heavy duty, high current. They are a product of General Electric Co., Welding Dept., York, Pa.

Circle No. 55 on Inquiry Card-Page 17

Machine Wet or Dry-Scrubs Hard-to-Clean Floors

A heavy-duty floor machine with a 22-inch diam brush has been introduced by the Kent Co., 832 Canal St., Rome, N.Y. Especially suited for hard-to-clean factory floors, it incorporates a balanced power principle. The 1 hp motor is offset to counter-balance handle weight and minimize the sidewise pull of a conventional, center-mounted motor. Heavy grease accumulations can be dry-scrubbed with a special multiple brush which is self-cleaning and self-sharpening. The machine can also be used for wet scrubbing when needed. The machine balances a full 130 lb on the brush and spins that weight at a 160 rpm clip, covering a full 22 in. diam with every sweep.

Circle No. 56 on Inquiry Card-Page 17

QUICK-CONVENIENT Use the Inquiry Card on Page 17 for additional information on any product



FRACTIONAL HP SEALED-LIFE

Have same basic features found in regular Dodge Sealed-Life Belts recommended for use in single belt drives within their rated HP capacities—provide a maximum of service.



h

1

it

1

et

nt of

15

al 1-

1-

et

ne

a

n.

Virtually two belts molded back-toback as a single unit. Used in special drives where belt must transmit power to two or more sheaves. Embody all features of regular Sealed-Life Belts.

DODGE CUT-TO-LENGTH V-BELTING

Available in rolls, permitting its use in any desired length by using a fastener. Similar in construction to Sealed-Life Belts except load is carried by multiple plies of woven fabric.











of Mishawaka, Ind.



CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory-trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory. Or write us.

DODGE MANUFACTURING CORPORATION 1300 Union St., Mishawaka, Ind.



Torque-Arm



Taper-Lock Sheaver



Dodge-Timken Bearing



Diamond D and Rolling-Grip Clutches



FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, CHICAGO THRIFT-ETCHING CORPORATION, 1555 N. SHEFFIELD AVENUE, CHICAGO 22, ILLINOIS

For More Information Circle No. 181 on Inquiry Card-Page 17

DECEMBER, 1954

LILLY .

Are You BARRED

from planned assembly savings

BY A THREAD?

No matter how carefully you plan to take advantage of the proved speed and simplicity of the self-tapping screw method, your planning won't pay off if "softies" and "cripples" turn up among the screws you use.

Screws can be "trouble-bent" in many ways. Like the thread faults listed here, most are invisible, but their effects (job slowdown, parts spoilage, high reclamation expense, hidden weakness) show up clearly in mounting assembly costs and customer complaints.

That's why P-K quality standards have been set so high — to make sure you get Self-tapping Screws that are not only threaded, but headed, pointed, and heat-treated with one purpose in mind, to keep your assembly lines trouble-free.

P-K Self-tapping Screws are the leading choice of experienced specialists who plan assembly of America's best known products. Follow their lead... for day-in, day-out dependability, specify P-K. For information on any fastening problem, talk to a P-K Assembly Engineer . . . Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14. Chicago Warehouse, 4331 West Lake St., Chicago 24.



PARKER-KALON











soi.Di reduc Screw

tappi

IN STOCK

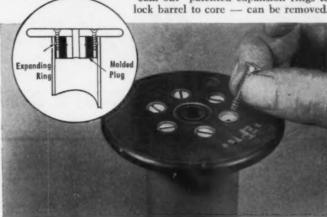
. see your nearby P-K Distributor . . .

ODERLESS BATTERY TERMINAL assembly by Triple-A Co. was reduced from 5 to 2 operations when P-K Hex Head Type F screws were adopted as clamp fastenings. Screws clear cored holes they are driven by automatic machines - eliminate drilling, tapping, and awkward screw handling. They provide firm, sure grip on terminal, yet can be removed and replaced if necessary.



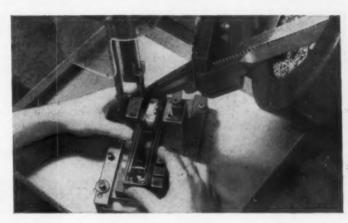
EPI BOBBINS, products of Engineered Plastics, Inc., must withstand extreme end pressure of nylon and other synthetic yarns under tension. Six P-K Type F-Z Screws fasten each laminated phenolic flange securely. Power-driven screws tap into Durez plugs and

"cam out" patented expansion rings to lock barrel to core — can be removed.



with P-K quality-planned assembly savings pay off





EASTMAN KODAK speeds up assembly of the Kodalite Flashholder by using P-K Self-tapping Screws. Troublesome tapping of small holes in plastic is eliminated. Screws are driven with hopper-fed automatic machines, removing necessity for tedious screw handling and placement. Two P-K Phillips Head Type F

Screws fasten a cover mounting bracket to the flashholder case (right) and three more fasten the metalized Tenite II reflector to the case (left). Case is a thermo-setting phenolic. Screws hold firmly under all stresses of normal use, can be removed for attachment of new reflector.

The First originated by P-K . . . and First Today . . . the leading choice for fastening economy

F-TAPPING SCREWS

















our local Supply and Service Specialist

For More Information Circle No. 182 on Inquiry Card-Page 17



225° F.

now!

HARD RUBBER PARTS FOR HIGH TEMPERATURES

... ace tempron

ACE TEMPRON, a new synthetic hard rubber, now makes the chemical resistance, strength, and economy of hard rubber available for high-temperature applications! It is stable and rigid up to 225 deg. F. and higher, and shows remarkable resistance to many chemicals when tested at 200 deg. F.

Based on nitrile synthetic rubber (Buna-N), Tempron is available in three forms: (1) Molded parts, (2) sheet, rod and tubes, for machining a wide variety of shapes; and, (3) a hand-fabricating process for making tanks, large fittings, etc., by forming sheets of Tempron around cores or mandrels prior to vulcanization. Standard pipe and fittings are also made.

The table below tells the story — high tensile on a par with the better plastics — a chance to save weight — good impact strength — good dielectric properties — excellent chemical, oil and moisture resistance — and ability to withstand high temperatures without loss of mechanical strength.

Let your imagination loose on these typical applications: molded parts for hot jobs; special fittings for corrosives; transformer insulation; brine and gasoline meter parts; trays for vacuum dryers; plating barrels; hot brine systems; tubing for electrical condensers, magneto parts.

Do you make anything that might be improved by Ace Tempron? Why not look into it? Let us know and we'll be glad to help. No obligation, of course.

	PROPERTIES	MOLDED PARTS, SHEET, ROD & TUBES	HAND- BUILT Products
PHYSICAL AND AND ELECTRICAL PROPERTIES OF TEMPRON	Tensile Str., psi. Elongation, % Specific Gravity Hardness—Durometer D Impact, ft.—Ibs./in. Flexural Str., psi. Dielectric Str., v/mil, 60 cyc. Power Factor, 1 kc. Dielectric Constant, 1 kc. Water Absorption, (48 hrs. R.T.%) Heat Distortion Temp., deg. F.	7170 2.70 1.24 87 0.41 11,300 400 0.016 3.50 0.12 275	7500 2.80 1.25 87 0.49 11,800 460 0.016 3.70 260

ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY 93 WORTH STREET - NEW YORK 13, N. Y.

For More Information Circle No. 183 on Inquiry Card-Page 17

Cushion Throats Minimize Plier Flying Chip Hazards



Most types of diagonal and side cutting pliers can now be equipped by the Utica Drop Forge & Tool Corp., Utica 4, N. Y., with a "cushion throat" safety feature. The design is valuable in electronics work, where cuts can be made inside a chassis without danger of snips of wire falling into the set. On live work, this helps to prevent short circuits. When cutting springs or hard wire, the safety feature greatly eliminates flying chip hazards. The "cushion" is tough, rubbery red Plastisol, bonded beside the cutting edge of the pliers. As the pliers close, the cushion grips the short end of the wire tightly, holding as the cut is made.

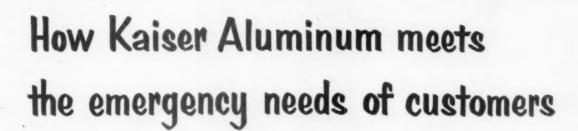
Circle No. 57 on Inquiry Card-Page 17

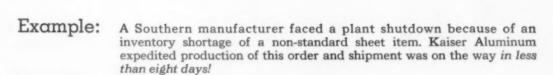
Fork Truck Handles Fragile Loads Smoother



A stand-up type, end-control fork truck, in production by Clark Equipment Co., Battle Creek, Mich., incorporates easier steering for reduced driver effort, more efficient hydraulic control of lifting and tilting mechanisms for smoother handling of fragile loads and positive hydraulic braking for increased safety. Steering improvements in the truck were effected by designing the steering gear box to accept gears operating in needle bearings for practically friction free rotation.

Circle No. 58 on Inquiry Card-Page 17





Example: A Cleveland manufacturer placed a rush order for sheet—setting a delivery date which he felt was practically impossible. Kaiser Aluminum shipped the sheet 3 days before the "impossible" date!

Example: A St. Louis manufacturer was faced with a complete shutdown unless he could get almost immediate delivery. Kaiser Aluminum expedited both production and shipment—delivered in quantities to insure normal, uninterrupted operation.

These are typical examples of how we act to meet customer emergencies.

They are typical because of our personalized, flexible delivery service which is available anywhere in the country. Typical because of the attitude of the people behind this service—an attitude that moves them to work harder, longer and with greater determination.

For immediate attention to your needs, call or write any Kaiser Aluminum sales office listed in your telephone directory.

Or contact Kaiser Aluminum & Chemical Sales, Inc. General Sales Office, Palmolive Bldg., Chicago 11, Ill.; Executive Office, Kaiser Bldg., Oakland 12, California.

Kaiser Aluminum

setting the pace—in growth, quality and service

1

- c, e s e t r y e d

rt

7

k

nt t-

ed ed

rs

17

IG



Just to name a few . . . and most of the parts we are making to special order don't really have a name! Our real specialty is fabricated wire cloth parts, made to your specifications.

Any metal, almost any size, almost any shape . . . we can probably assemble it for you . . . faster, better and at a lower cost, than you can do it yourself.

For more information, just send for our latest Fabricated Parts Catalog.





351 VERONA AVENUE • NEWARK 4, NEW JERSEY
For More Information Circle No. 185 on Inquiry Gard—Page 17

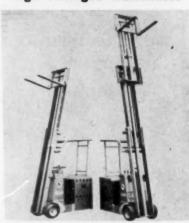
New-Type Tool Ejector



Scully-Jones & Co., 1901 S. Rockwell St., Chicago, Ill., is offering specifications for new style drift slots and a line of standard "Keyhole" tool ejectors. The advantage of the "keyhole" design is said to lie in the fact that it eliminates damage to machine bearings and spindles, often caused by hammering on conventional drifts. The new ejectors are easier to operate and reduce tool-change time considerably on some jobs. Slot design consists of a round top portion, which serves as a bushing for the "key". and rectangular slot to permit use of conventional drifts should a tool or adapter become jammed in the spindle

Circle No. 59 on Inquiry Card-Page 17

Telescopic Mast Stacks High Ceilinged Warehouses



To meet the problem of new single-story, high ceiling warehouses, where the need for extra high stacking fork lift equipment is mandatory, Lewis-Shepard Products, Inc., Watertown, Mass., has developed a double telescopic mast. It gives an electric fork truck a fork elevation of 222" with a collapsed height of 105". This extra height is obtained by adding an extra section to the standard telescopic mast. The added lifting height permits higherthan-average stacking to enable every inch of storage space within a warehouse to be used to full advantage.

Circle No. 60 on Inquiry Card—Page 17

For More Information Circle No. 186
on Inquiry Card—Page 17→

PURCHASING

MIDWEST "LONG TANGENT" ELBOWS

SAVED \$15620

ft

fp to 28 d

w

d

._ h

"

se

ol

ie

17

is

IS

t.

k

d

S

n

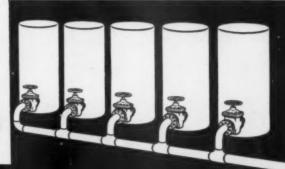
e

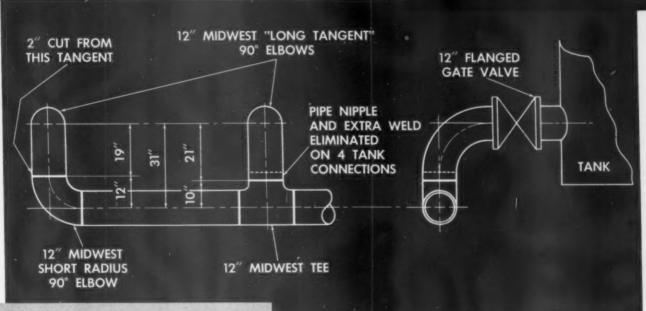
e

a

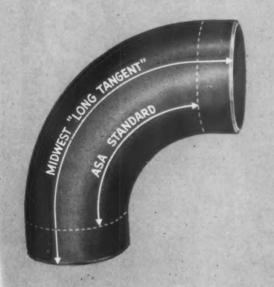
7

On This Welding Piping





MIDWEST "LONG TANGENT" LBOWS COST NO MORE THAN OTHER ELBOWS



The Problem:

To connect the five tanks shown in the sketch at top to a common 12" header.

The Difficulty:

The center-to-outlet dimension of the 4-12" tees is only 10", while the shortest elbow available measures 12" center-to-end, Thus, if standard long radius elbows are used next to the five tank valves, four short nipples and four extra 12" welds would be required.

The Solution:

By using Midwest "Long Tangent" elbows as shown in the blueprint, the expense of the four extra nipples and welds was eliminated at the cost of just one cut! The actual net savings made by "Long Tangent" elbows on this job was \$156.20.

Remember-Midwest "Long Tangent" elbows cost no more than regular elbows! For further information, write for Catalog 54.

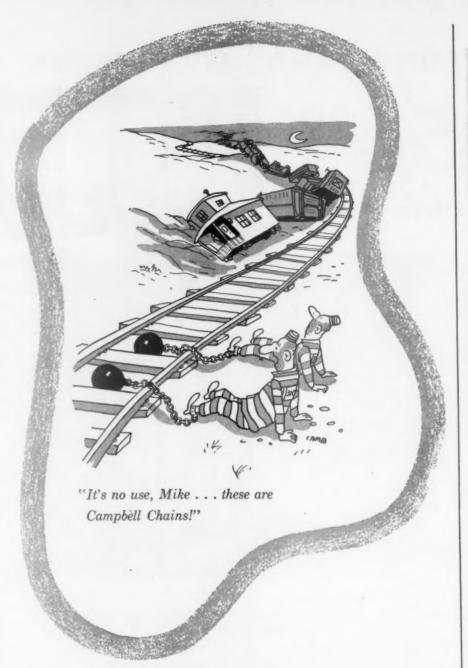
MIDWEST PIPING COMPANY, INC.

Main Office, 1450 South Second St., St. Louis 4, Missouri

PLANTS: ST. LOUIS, PASSAIC, LOS ANGELES, and BOSTON

SALES OFFICES: NEW YORK 7—50 CHURCH ST. • LOS ANGELES 33—520 ANDERSON ST.
BOSTON 27—426 FIRST ST. • CHICAGO 3—79 WEST MONROE ST.
TULSA 3—224 WRIGHT BLDG. • HOUSTON 2—1213 CAPITOL AVE.

CLEVELAND 14—616 ST. CLAIR AVE.



There's no substitute for safe, long-wearing Campbell Chain for hundreds of jobs of hauling, holding or hoisting. Campbell makes chain for every purpose, in any size, grade or specification. And Campbell Chain is inspected link-by-link to guarantee long-lasting service. Your jobber can give you complete data on all standard sizes and grades. On unusual chain problems, write us direct.

CAMPBELL CHAIN Company

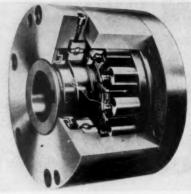
Main Office, York, Pa. • West Burlington, Iowa Portland, Oregon • Sacramento, California

Makers of Famous CAMPBELL Lug-Reinforced TIRE CHAINS

CHAIN

For More Information Circle No. 187 on Inquiry Card-Page 17

Heavy Duty Cam Clutches



Morse Chain Co., 7601 Central Ave., Detroit 10, Mich., has in production a line of extra heavy duty ball bearing overrunning clutches for indexing, backstop and general duty machinery applications. The clutches have a toothed inner race driving member that actuates closely spaced independently sprung cams. Tapped holes are provided in both ends of the clutches for attaching sprockets, gears, pulleys or ratchet arms for drive requirements from 1,300 to 6,000 foot-pounds. Desired direction of rotation is thus easily obtained by attaching the component to either side of the clutches.

Circle No. 61 on Inquiry Card-Page 17

Paint Heaters Control Material Temperatures

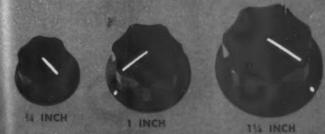


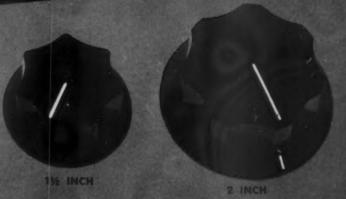
The ultimate in control of organic material temperatures for the hot spray process is claimed by the DeVilbiss Co., 300 Phillips Ave., Toledo 1, Ohio for its paint heating system. Utilizing hot water, it is designed for maximum efficiency in either large or small painting operations. To simplify the system and make it foolproof, the unit has been designed with only one moving part—a pump for circulating hot water.

(Please turn to page 154)

For More Information Circle No. 188 on Inquiry Card—Page 17→







a <u>New</u> All-purpose Functional Design In a Standard Line of Instrument Knobs

Now, without tooling charge of your own, you can dress up your instrument line with these beautifully designed, readily available knobs by Kurz-Kasch.

Look them over! Shown actual size, dimensions given are flange diameters. All sizes have 1/4" shaft holes—come with or without brass inserts—any type of setscrew (one or more).

Undersides are counterbored. Color, metalized, and filled or unfilled indicator lines at your option. Here's style at a price!

Turn to Kurz-Kasch for the most complete line of standard knobs in the industry—and SAVE. Send for samples and specification data today—or request full line data on knobs not shown. Inquiries answered at once.



Don't overlook these popular Kurz-Kasch designs for bar knobs, pointer knobs and dual control vernier knobs.

KURZ-KASCH

Specialists in Thermo-Setting Plastics for 37 years

Kurz-Kasch, Inc. • 1431 S. Broadway • Dayton 1, Ohio BRANCH SALES OFFICES: New York, Mt. Vernon MO 4-4866 • Rochester, Hillside 4352 • Chicago, Merrimac 7-1830 • Detroit, Jordan 6-0743 • Philadelphia, Hilltop 6-6472 • Dallas, Logan 5234 • Los Angeles, Richmond 7-5384 • St. Louis, Parkview 5-9577 • Atlanta, Exchange 0414 • Toronto, Riverdale 3511.

EXPORT OFFICE: 89 Broad St., New York City, Bowling Green 9-7751.

Check for accuracy . . . for strength . . . for neatness. You'll find that pressure vessels and process equip-ment fabricated at Downingtown Iron Works rate high on any check list. Expert welding is one of the reasons why. It's a highly developed skill at Downingtown.

We've developed special welding techniques—approved for ASME code work—which result in sound, strong, neat welds. Experienced

welders skillfully perform automatic submerged arc, gas-shielded and other welding processes. Welds are X-ray inspected as required.

Downingtown is thoroughly experienced in fabricating various grades of carbon steel, stainless steels, nickel clad, stainless clad, Monel clad, cupro nickel, aluminum, and many other alloys. Write for further information.

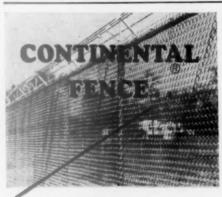
Downingtown Iron Works, Inc.

Downingtown, Pennsylvania New York Office: 52 Vanderbilt Avenue, New York 17, N.Y. Heat Exchangers—Towers—Pressure Vessels Storage Tanks—Steel and Alloy Plate Fabrication

Pressed Steel Tank Company

Milwaukee 14, Wisconsin Manufacturer of Hackney Products

CONTAINERS AND PRESSURE VESSELS FOR GASES, LIQUIDS AND SOLIDS For More Information Circle No. 189 on Inquiry Card-Page 17



Low Cost Security

Today, more than ever it's important to protect persons against injury and property against damage. Get permanent low cost security and control with the better built



Continental Chain Link Fence.

Kokom	0.	Ind	iana	
20000000	-,	2000		

Please send FREE copy of "Planned Pro-tection"—complete manual on property protection.

Name

Address_

CONTINENTAL

STEEL CORPORATION . KOKOMO, INDIANA

For More Information Circle No. 190 on on Inquiry Card-Page 17

-IET



VROUGHT

write for our new catalog of standard and special washers for all types of industrial applications.



COMPAN

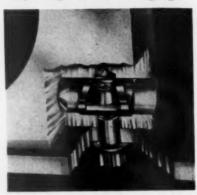
Moen & Connell Avenues Joliet, Illinois

For More Information Circle No. 191 on on Inquiry Card-Page 17

Material to be sprayed is heated in a heat transfer unit located near the spray station. Exchange of heat from the hot water to the material is positive and speedy. Paint cannot become overheated.

Circle No. 62 on Inquiry Card-Page 17

Barrel Nut Needs no Wrench Openings to Join Forgings



The Elastic Stop Nut Corp. of America, Union, N. J. announces the development of a self-locking, high tensile barrel nut with floating action for joining forgings and other structural members without need of a large opening for wrenching. The nut can be inserted in a simple production drilled hole. Machining out of a large area to give wrenching room is not necessary. This gives a simpler, stronger joint with greatly reduced machining requirements. The nut is designed to withstand up to 180,000 psi at the pitch diameter of the bolt, enabling it to meet high strength and safety factor requirements. The nut body can move perpendicular to the axis of a hole a total of 0.030" in either direction. This compensates for misalignment in the bolt hole.

Circle No. 63 on Inquiry Card-Page 17

Personal Subscriptions

Many readers of PURCHASING Magazine have asked if it is possible to have an additional subscription sent to their home address. They feel that the articles are of such value that they would like to receive copies at home where they can really digest the contents in leisure. Surely you may! Just drop a card to us with your home address and we will bill you (or your company) at the regular rate of \$4.00 for 12 issues.

Whatever your fuel needs, we have a coal that is

Just the Ticket !

• In fact, you can write your own ticket—for the vast Bituminous fields served by the Baltimore & Ohio contain excellent coals in wide variety. For centuries to come, these coals will be available—a dependable source of low-cost heat and energy.

Modern mechanization at the mines assures low costs as well as uniform size and quality. The location of the fields—close to industry's front door—contributes to low transportation expense. Storage is economical because costly facilities are not required. And with the help of new combustion methods and equipment, Bituminous offers its users an increased burning potential.

ASK OUR MAN! He can give you worthwhile advice as to supply sources and burning methods for the particular coal you need. The efficiency, economy, and cleanliness of B&O Bituminous today will be a revelation!



BITUMINOUS COALS FOR EVERY PURPOSE

COKING

HEATING



BALTIMORE & OHIO RAILROAD

Constantly doing things-better!

Only MOBILIFT gives you Mobil Malic Drive*

with HYDRA-LIZER*



More Operational and Service Features

- Easy to get on and off from either side.
- Spring mounted rear wheels for riding comfort.
- Combination ball bearing worm and nut type steering.
- One-piece hinged hood for easy access to engine compartment.

AND MANY OTHERS

* MOBIL-MATIC DRIVE

Fluid coupling, oil-immersed clutch, constant mesh transmission — a combination that transmits power smoothly and efficiently with minimum wear and service. There is NO CLUTCH PEDAL — just ONE push-pull forward and reverse lever!

* HYDRA-LIZER

Another Mobilift exclusive ... equalizers mounted on each rear wheel and connected hydraulically to cross compensate the truck when the front or rear wheels pass over bumps or depressions.

THIS
Wheel Roises



MOBILIFT Mobil Matic (2)

LAMSON
MOBILIFT CORP.
Home Office: Portland, Ore.
Offices in principal cities

612 Lamson St.,			
Please send complete units to:	information on 3000	and [4000-1	b. capacity
Name		_Title	
Company		_Title	
_		_Title	

For More Information Circle No. 193 on Inquiry Card-Page 17

Enclosed Wound-Rotor Motor Fits Hazardous Areas



What is believed to be the first rib - type enclosed, fan - cooled wound-rotor motor made with slip rings, brushing rigging, rotor and stator inside a single frame en-closure is now available. The unit is made in 1800 rpm and slower speeds. in frames 284 to 505, in standard enclosed or explosion-proof construction. In general the motor is applicable where very low starting current, high starting torque, smooth acceleration, jogging or variable adjustable speed dictate the use of a wound-rotor motor and where moist, dirty, corrosive, or hazardous atmospheres require a totally enclosed motor. The maker is Allis Chalmers Mfg. Co., 923 S. 70th St., Milwaukee, Wis.

Circle No. 64 on Inquiry Card-Page 17

Aluminum Ribbed Siding



Attractive low cost siding on industrial buildings is claimed possible with a new aluminum product. It is ribbed sheet intended for use on frame type structures or as a facing sheet on concrete block buildings. By using two layers of aluminum siding with a center layer of glass fiber insulation, a wall can be built with an insulation value equivalent to a 24-inch brick wall. The sheet is available in .032" thickness and in from 5' to 18' lengths in 6" increments. It is a product of Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa.

Circle No. 65 on Inquiry Card—Page 17
Purchasing



you'll get fast service and experienced counsel

Your bearing distributor carries complete stocks of all types of anti-friction bearings, including Torrington Self-Aligning Spherical Roller Bearings.

Torrington Spherical Roller Bearings are designed and produced to carry heavy loads in heavy-duty equipment—to roll with the punch whenever shaft deflection or housing misalignment is prevalent.

Their low friction reduces power consumption and allows higher loads and speeds to be maintained. They are easy to install because of their unit construction — no adjustment for running clearance is necessary after bearing mounting has been made.

Your bearing distributor can help you by showing you the factory-approved methods for installation and maintenance of Spherical Roller Bearings. He'll show you how to get maximum service life with minimum maintenance from them — helping you to cut costs and raise operating efficiency of your equipment.

Your bearing distributor also carries complete stocks of the other widely used Torrington Bearings illustrated.

THE TORRINGTON COMPANY

TORRINGTON, CONN. . SOUTH BEND 21, IND.

DISTRICT OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES OF UNITED STATES AND CANADA

For More Information Circle No. 194 on Inquiry Card-Page 17



NOTHING TAKES THE PLACE OF VULCANIZED FIBRE

the Tough Stuff that makes a rough job easy to handle ...

Sanding and grinding work is most likely to smooth out successfully for the operator when he uses abrasive discs made of vulcanized fibre. National's Abrasive Fibre is favored among the makers of abrasive discs for its toughness, high tear strength, ability to withstand severe mechanical stress, and for the long service it provides. It has outstanding gluing properties, too. The overall result is performance that pays off at every speeding turn of the wheel.

It's the toughness of our fibre that counts in abrasive discs.

But National Vulcanized Fibre is so versatile—so inherently endowed with good characteristics—that this material offers practically every industry one or more essential qualities. Light weight, high dielectric strength, resilience, durability, machinability—what does your business need? Electrical components, gears, pulleys, bobbin heads, welders' masks, football helmet crowns—what do you make? National Vulcanized Fibre is almost certain to fill your bill of specifications, no matter how exacting.

Give us a call. We'll be glad to show you why National Vulcanized Fibre is called the Material of a Million Uses.



NATIONAL

VULCANIZED FIBRE CO

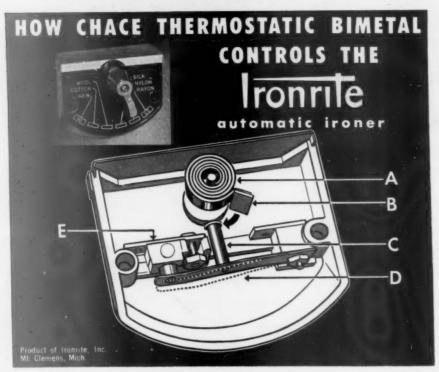
WILMINGTON 99, DELAWARE

FOR YOUR STAFF—just off press... an eightpage booklet entitled "Meet 'Sherlock' Fibre (or, Clues You Should Know To Make Profits Grow)." Tells—at a minimum of your reading time—why National Vulcanized Fibre is "the material of a million uses." Ask the National representative nearest you for your copy. He's listed in the classified directory. Or write to National Vulcanized Fibre Co., Dept. E-12, Wilmington 99, Delaware.



Also manufacturers of Phenolite Laminated Plastic, Vul-Cot Waste Baskets, Peerless Insulation, Materials Handling Equipment, and Textile Bobbins.

For More Information Circle No. 195 on Inquiry Card-Page 17





Ironrite Automatic Ironers are designed from a functional as well as an aesthetic viewpoint, their chief advantage being speedy, efficient ironing of all materials in almost any shape or form. Simplicity of operation and control are some of the Ironrite Automatic Ironer's foremost features. Of course, for safe, fool-

proof regulation of temperatures for ironing different fabrics, the Ironrite depends upon Chace Thermostatic Bimetal.

The control switch shown in the illustration is simply, quickly set for temperature variations by moving the indicator to the correct temperature shown for various materials. Whenever the ambient temperature attains the maximum, things begin to happen. A coil of Chace Thermostatic Bimetal (A) rotates, forcing plate (B) against post (C). This leverage bends the circuit connector (D), breaking the circuit at (E) until the ambient temperature is lowered. When the indicator is set for low temperatures, the coil is adjacent to the post and has less distance to move to break the circuit. At high temperature settings the coil is at its extreme distance from the post and requires a greater amount of heat to break the circuit.

Chace Thermostatic Bimetal is available in 29 different types, in strip, rolls or in completely fabricated assemblies made to your specifications. Before development of your new controlling, indicating or protecting device, read our booklet "Successful Applications of Chace Thermostatic Bimetal." Write for your free copy of this valuable engineering data today.



For More Information Circle No. 196 on Inquiry Card-Page 17

Puts Out Fires Readily



A dry chemical fire extinguisher is ready at a second's notice to put out gas, oil, grease or electrical fires. It is easy to operate because it is already pressurized to 150 psi with air or nitrogen. The transparent plastic nozzle fans out a flat discharge pattern in a downward direction over a wide area. Metered valve passageways maintain a dense uniform discharge from the first release to the last. Valve gage gives constant reading of pressure to indicate when recharging is needed. Manufacturer is American-La-France-Foamite Corp., Elmira, N.Y. Circle No. 65 on Inquiry Card-Page 17

Also Noted . . .

A covered manganese bronze electrode for high speed metal arc welding of manganese bronze and yellow brass castings and sheet and plate is being produced by Ampco Metal Inc., Weldrod Dept., 1745 South 38th St., Milwaukee 46, Wis. The electrodes operate at relatively high current densities on reverse polarity, d-c for fast deposition.

Circle No. 67 on Inquiry Card—Page 17

The Dayton Mfg. Co., Minneapolis 7, Minn., is offering die-cut stamped spanner wrenches in small quantities without the cost of conventional die tooling. Practically any type spanner can be blanked and formed at about 15% to 20% the cost of conventional tooling. The spanner wrenches can be produced from practically any sheet alloy.

Circle No. 68 on Inquiry Card—Page 17

A combination **cold cleaner** to replace highly volatile solvent cleaners in still tanks on the production line is offered by E. F. Houghton & Co.,

(Please turn to page 164)

For More Information Circle No. 197
on Inquiry Card—Page 17→
Purchasing

THEY'RE LAUNCHING THE World's deadliest fish

It's the revolutionary U.S.S. Nautilus, world's first atomic-powered submarine and fastest recruit ever to join America's underseas fleet.

Built by the Electric Boat Division of the General Dynamics Corporation, the *Nautilus* can travel around the world completely submerged, surface to attack the enemy, then dive under water to race away at a speed that defies pursuit.

Naturally, every component of the Nautilus, down to

the last bolt, had to meet tough specifications. They weren't too tough, however, for the Ward Leonard electric control components and equipment installed.

Point is, when you want truly dependable performance from an electric control—whether it's for an atomic sub, an electronic computer or a traffic light—take your pick from the complete Ward Leonard line. And check the other side of this page for the story behind the fine reputation of Ward Leonard resistors.

4.8



WARD LEONARD ELECTRIC COMPANY MOUNT VERNON, NEW YORK





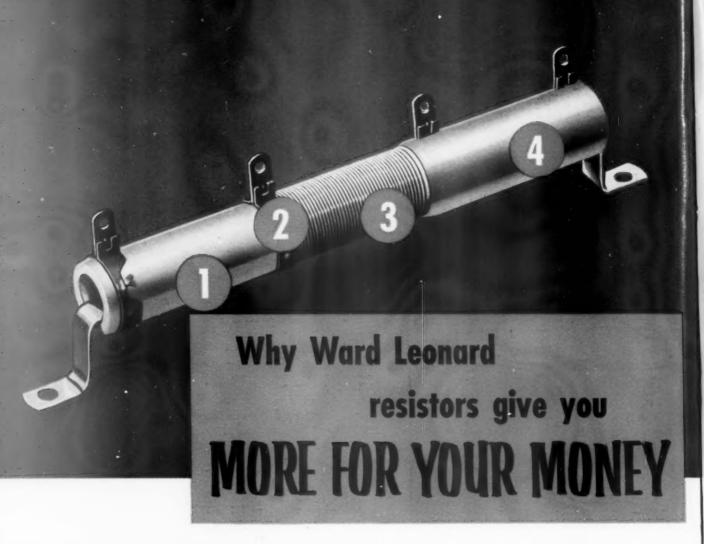


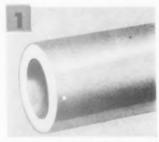






Result-Engineered Controls Since 1892

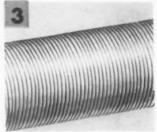




RESISTOR CORE. Ward Leonard's own manufactured cores are perfectly smooth, cylindrical ceramic bodies of high density, low porosity, and high dielectric strength. The ceramic material has been selected so that its thermal coefficient of expansion is correlated to that of the other components.



TERMINALS. In Ward Leonard resistors, special alloy terminals insure proper expansion and adherence to the enamel, are designed to provide strong anchorage. Every wire-to-terminal junction is firmly clamped to the core, then specially silver-brazed for lasting contact.



RESISTANCE WIRE. All wire is drawn to our own specifications for each particular resistor type. It's capable of withstanding heavy overloads, has a uniformly low coefficient of resistivity. Many of the "bargain" resistors are wound with resistance wire of ordinary grade.



COATING. Vitrohm enamel coating of all Ward Leonard resistors provides a complete hermetic seal — highly resistant to shock, high humidity, extreme temperatures, acids, alkalies, and electrolysis. Unlike most resistor manufacturers, we manufacture our own vitreous enamel.

Our new 64-page Catalog 15 tells you more about the Vitrohm line of power resistors. It also includes many helpful charts and data. Write for it today to Ward Leonard Electric Company, 500 South Street, Mount Vernon, New York.



WARD LEONARD ELECTRIC COMPANY MOUNT VERNON, NEW YORK





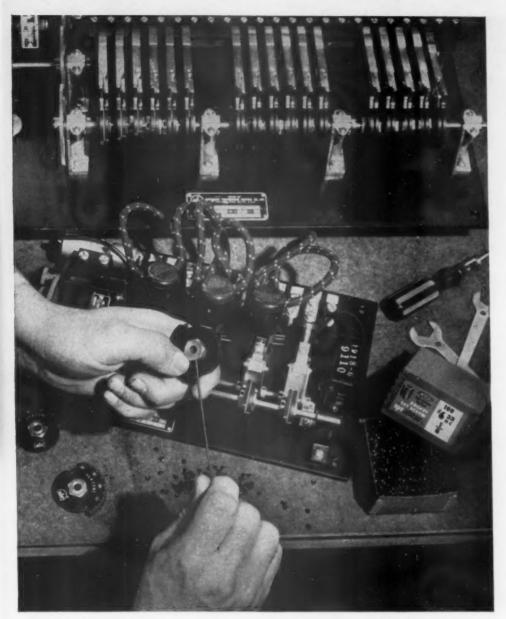








Result- Engineered Controls Since 1892



Two UNBRAKO Self-Locking Socket Set Screws are used on each cam of these precision multicircuit cam timers. The screws position the cams so as to control accurately the sequence and duration of one or a series of individually timed machine or process operations.

You'll need less space for storage when you use Unbrako Standards—stocked by your distributor

You'll need less space for storage and be able to carry a smaller inventory, because standard Unbrako socket screw products are in stock at your local industrial distributor's. And you'll save time and money, because deliveries are prompt. For more information, write for Unbrako Standards—a complete listing of socket screw products made by the world's largest manufacturer of these precision fasteners. Standard Pressed Steel Co., Jenkintown 31, Pa.



Assembler picks up tiny UNBRAKO set screw with long arm key preparatory to threading it into cam assembly.



He inserts the UNBRAKO, and turns it into the assembly; then after positioning cam, tightens it. The accurate depth and size of the hex socket result in maximum torquing—the knurled cup point holds the cam accurately in place.



UNBRAKOS—made of heat treated alloy steel—have fully formed threads, Class 3 fit; are supplied in standard sizes from #4 to 1".



to

ve us

SOCKET SCREW DIVISION





DAGE FENCE-Since 1883

. AMERICA'S FIRST WIRE FENCE .



• Page Chain Link Fence, pioneered by Page and made only by Page, is quality controlled from raw metal to erected fence. Whether you choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum, you'll have a rugged fence on sturdy metal posts deep-set in concrete. Choose any one of 8 basic styles, varied by heights, types of gates, posts, top rails and barbed wire strands for extra protection. And to be sure of reliable workmanship your fence will be expertly erected by a specially trained firm. For helpful Page data and name of member nearest you...

Write to PAGE FENCE ASSOCIATION, Monessen, Pa., or look in Thomas' Register for listing of Page Chain Link Fence Distributors under "PAGE STEEL AND WIRE DIVISION," or see MacRae's Blue Book for listing under "FENCING, WIRE, LINK," or consult Sweet's Industrial Construction File.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

For More Information Circle No. 199 on Inquiry Card—Page 17



(Continued from page 160)

303 W. Lehigh Ave., Philadelphia 33, Pa. Plant safety is claimed to be increased as this room temperature water emulsion cleaner eliminates fire hazards. The 402-403 cleaning compound is easy to mix. Circle No. 69 on Inquiry Cord—Page 17

The Meyercord Co., 5323 W. Lake Street, Chicago 44, Ill., describes its gold color for decal truck signs as the finest reproduction of the actual metal now available. It is claimed to outwear previously used gold decal materials by 50% to 75%. The gold color does not have the dingy appearance of synthetic gold colors simulated in aluminum or bronzed coatings.

Circle No. 70 on Inquiry Card-Page 17

CEM

pre

and

Off

pro

chi

imp

A single-package material has been designed to eliminate the need for supplementary fillers or claytype ingredients to assist regular washing compounds in removing heavy oil and grease from industrial rags in machine washing operations. The cleaner is a complete material in itself, requiring no additives, according to the manufacturers, Oakite Products Inc., 154 Rector St., New York 6, N.Y.

Circle No. 71 on Inquiry Card-Page 17

A change to welded base pins for fluorescent lamps from soldered or crimped pins effects a positive metal to metal contact, eliminating the possibility of corrosion or contact resistance according to Sylvania Electric Products Inc., 1740 Broadway, New York 19, N.Y., manufacturers of the new model base pins. All the company's lamps in future will have the new base pins.

Circle No. 72 on Inquiry Card-Page 17

Hanson-Van Winkle-Munning Co., Matawan, N.J. has introduced four major improvements in its sisal buffing wheels that make for longer wear and faster cutting. Improvements include: (1) treatment with an impregnated material; (2) new center construction; (3) improved sewing; (4) use of a stronger sisal cloth.

Circle No. 73 on Inquiry Card-Page 17

Want more Facts on any of the products shown in this issue?
Get them quickly and easily by using the INQUIRY CARD PAGE 17

Office Equipment and Supplies section of PURCHASING Magazine

CEMBER 1954

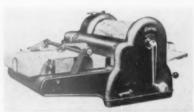
A well planned office prevents many headaches and problems. The Wood Office Furniture Institute provides a service to show arrangement of office machines and equipment to improve the "flow" of records and correspondence.



205 EAST 42ND STREET, NEW YORK 17

OFFICE EQUIPMENT

News



A liquid duplicator with a position control that raises or lowers the copy from a small fraction of a line to a full seven lines, is now available from Wolber Duplicator & Supply Co., Chicago. As described in Wolber's Bulletin No. 84, the Margi-Set Copy-rite, uses a visible indicator which shows the setting at all times and shows how much the copy can be raised or lowered from its present position. Changing copy position is done even when the machine is in operation.

Circle No. 74 on Inquiry Card-Page 17

Greater opacity for engineering drawings on vellum, necessary for quality reproductions when using Bruning, Ozalid and similar processes, is now made possible by use of a full coated, single-use yellow/black tracing carbon. It is manufactured by Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, N. Y.

Circle No. 75 on Inquiry Card-Page 17

Three new catalogs have been released by Maso Steel Products, Chicago, covering their line of office products. The Chair Catalog illustrates the 23 chairs and stools available in the company's three lines of chairs. The Business Machine Stand catalog is a black and white brochure featuring Maso's foot pedal for raising and lowering. The new Standard Catalog is an eight page, 8½ x 11" piece which details and describes Maso's line of stands. Copies may be obtained from Maso Steel Products, 53 W. Jackson Blvd., Chicago 4.

Circle No. 76 on Inquiry Card-Page 17

Remington Rand Inc., 315 Fourth Ave., New York 10, N. Y., has a special folder available holding samples of various weights and brands of Remington Rand carbon papers. Copies are available from the firm.

Circle No. 77 on Inquiry Card-Page 17

"Better Banking in Boston" is the title of a brochure that describes a combination of closed circuit television and mechanized, automatic, card finding system. Copies can be obtained from Wheeldex & Simpla Products, Inc., 40 Bank St., White Plains, N. Y. Circle No. 78 on Inquiry Card—Page 17



"Roto-file", a rotary card file that enables a clerk to find any one of 80,000 or more record cards in seconds, has been introduced by Mosler Safe Co., New York. "Roto-file" uses a battery of from 8 to 12 independently operated drums which can be worked, simultaneously, by as many as three clerks. Finger-tip pressure electrically controls each file drum and determines in what direction it will rotate. The drums, each of which can hold from 5,000 to 10,000 cards, revolve independently of each other either clockwise or counter-clockwise. It is available in four standard models ranging from 8 to 12 drums for the following card sizes; 3 x 5, 4 x 6, 5 x 8 and 31/4 x 73/8 (tabulating cards).

Circle No. 79 on Inquiry Card-Page 17

A new line of guides, especially designed for hard usage of tabulating systems, is being introduced by G. J. Aigner Co., Chicago. Both vertical and horizontal guides are included with a choice of three types of tabs; plastic insertable; plain; and special, madeto-order. They are available in two materials, 25 point gray pressboard or 18 point Bristol board. Literature and samples available on request.

Circle No. 80 on Inquiry Card-Page 17

The development of a new type wide-angle lens which is simplifying and modernizing American visual education, has been announced by Beseler Visual Products Co., Inc., New York. This highly calibrated lens will project a 6-foot screen image from a distance of 6 feet, using an 8" x 10" slide."

Circle No. 81 on Inquiry Card-Page 17



A new electric adding machine is being introduced by Olivetti Corp. of America, New York. Called the "Electrosumma Duplex", it features two registers capable of operating simultaneously for combined operations. One register can total or sub-total, and the resulting figure be simultaneously transferred to the other register, permitting grand totals to accumulate. It has a thirteen column capacity (99,999,999,999,99)

Circle No. 82 on Inquiry Card-Page 17
(Please turn to page 172)



expedited!

15,000 purchase orders totaling 16 million dollars

RECORD HANDLING ECONOMIES "AS HIGH AS 80%" CAN BE YOURS, TOO!

A simple and economical new system for handling purchasing records increases efficiency...saves valuable time for the Machinery Division, Dravo Corporation, Pittsburgh, Pennsylvania.

"We estimate that the direct economy in clerical time and effort, in avoidance of constant filing and refiling, runs as high as 80%. In the face of steadily increased volume, we have eliminated departmental overtime, and there is no backlog of unfinished work."

These words of Mr. Gordon P. Smith, Purchasing

Agent for the Machinery Division, Dravo Corporation refer to their system for expediting purchasing records using Remington Rand Kardex Visible Control Methods.

Under the system used by Dravo Corporation, "the control copy never needs to be removed from the file, and can always be located instantly."

For free literature and full details about the work and time saving system employed at Dravo, write for CH954, Room 2233.

Remington Rand

315 FOURTH AVENUE, NEW YORK 10, NEW YORK

For More Information Circle No. 201 on Inquiry Card-Page 17

Efficiency and Production can be Measured in Footcandles

By G. H. Gutekunst, Jr.

FFICE illumination has come a long way since the days of the flickering bare bulb and the dull frosted globe. However, even after 75 years of electric light bulbs, we are still learning ways and means of using this lighting power to improve the efficiency and production of the office worker.

To trace the history of lighting patterns throughout the years, makes little sense. It is sufficient to know that each phase, or "craze", has contributed to the simple understanding that office lighting is as important an addition to the overall operation of the unit as is the finest high-speed machine.

In line with this, general office lighting has, for all practical purposes, reached the common objective of providing good lighting in harmony with the general decor of the office. Only in the field of "specialized" lighting has there been any real degree of laxity.

For instance, the Office Lighting Committee of the Illuminating Engineering Society, in a detailed study released late in 1953, pointed out that the variety of office tasks called for different minimum lighting requirements. Involved work, such as accounting, bookkeeping, business machine operation, etc., called for a recommended 50 footcandles for efficient operation. Other office operations, such as doing general correspondence, mail room work, etc., needed only 10 footcandles.

What this might imply is merely that no one general illuminating scheme can successfully provide proper lighting throughout the office when all factors of cost, light efficiency, etc., are taken into consideration.

The series 0500 of the M. G. Wheeler Co., Inc., Greenwich, Conn., gives 50 to 75 foot-candles of light. It uses a standard 100 watt bulb with a series of baffles and reflectors to provide high level lighting over a concentrated area.



For that reason, the exponents of supplementary lighting—the manufacturers of the host of lamps and accessory fixtures—have a strong argument working in their favor.

The O. C. White Co., Worcester, Mass., one of the many manufacturers of supplementary lighting fixtures, makes this statement in its general catalog.

"Any attempt to obtain satisfactory results in the lighting of work by reliance upon flood lighting or general illumination alone has repeatedly proved a costly experience. In fully 90% of such installations, not only is the individual worker deprived of adequate illumination on his work—an illumination which should be under his direct control—but also the cost of electric current for such lighting is found to be surprisingly high."

The M. G. Wheeler Co., Inc., Greenwich, Conn., takes a simple sentence to pronounce the cause for its "Sight-Light" lamps.

"Whether your sight is perfect or you wear correctional glasses, you can see only in relation to the quantity and quality of light on whatever you are looking at."

Even the slogan of one company, Swivelier Co., Inc., New York, pinpoints the value of supplementary lighting. "Spot the light where you want it Light the spot where you need it."

There are many reasons behind the recognition of supplementary lighting as an important asset to an office's lighting plan. Most of them are caused by the simple fact that the office has "grown-up".

Modern business, with its ever increasing tempo, has brought about new...OZALITH
paper offset plates-

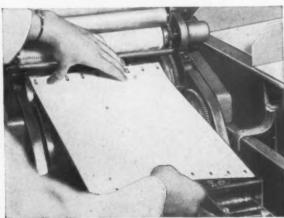
The first sensitized

positive paper plate...

from original to running press
in less than 90 seconds...



1—Lay translucent copy over Ozalith, and expose in any Ozalid machine or similar light medium.



2-Swab exposed plate with developing fluid and fixer, place on press cylinder-and you're ready to run.

Ozalith...the new quick way to make offset plates will save you time and money over conventional photographic methods. Think of it—no camera-work, no negatives! You go *directly* from translucent original to running press—in less than 90 seconds!

Just place the original on the Ozalith plate, and expose in an Ozalid machine—Bambino to Printmaster—or any similar light medium.

Swab the exposed plate with developing fluid and fixer, place on the press cylinder—and it's ready to run.

Ozalith saves the cost of film and photography, eliminates the need for darkroom and messy developing... and Ozalith paper plates are so inexpensive that they needn't be filed. You can make extra plates when needed, quickly and inexpensively, from your original.

For longer runs, and absolute dimensional stability, Ozalith plates are also available on aluminum.

For a demonstration of Ozalith plates in your own office, call the nearest Ozalid distributor (see phone book). Or write for information to 662 Ozaway, Johnson City, New York.

OZALID—A division of General Aniline & Film Corporation... From Research to Reality.
In Canada, Hughes Owens Company, Ltd., Montreal.

OZALITH



The "old-fashioned" gooseneck lamp has gone modern in this model 127 of O. C. White Co., Worcester, Mass. Adjusting the flexible neck eliminates shadows and brings the light to focus on the desired spot.



Usefulness is combined with decorative effect in this two-bulb desk lamp of Fluorescent Lighting Laboratories, Inc., New York City. A flexible gooseneck arm throws the light where needed and the perpetual calendar at the base is a handy accessory for any office.

a form of a revolution which has removed the office area from a sterile, cold, labor area to a warm, relaxing work area. Color, smart design and host of other progressive developments have done much to take the edge off the high tense and nervous pressure of today's "hurry up" business activities.

Soft, yet strong, lighting has generally replaced harsh plans that fatigued the eye. Color—hues that only a few years ago were even radical for the home—are now appearing in more and more offices. Even the typewriter has become glamorized. The ugly black monster has become a streamlined beauty in soft, relaxing gray. And, even further than that, this most common

of all office tools is now often a two-toned affair in shades of red, green, blue, etc.

While these developments have done much to relieve much of work disturbing eye-strain, they have created another problem. They have made the task of recognition more difficult. As with letters, the black figures on a white background make the reading problem easy, provided there is sufficient light in relation to the size of the figures. The addition of color and toned-down grays has made the act of recognition of equipment and work problems more work for the eyes.

While this problem does exist, there can be no doubt that the introduction of softer lighting and color has been far more of an asset than a deficit. Comfort and relaxation in working areas today has eliminated many of the delays previously caused by actual physical illnesses due to "unharmonious" working conditions.

Of course, one of the paramount considerations in a lighting problem must be in cost. A high level lighting plan that would produce an over-all output of 50 footcandles would be a needless expenditure of money and electrical energy in many office areas. As a matter of fact, in many cases it would be too high a level of lighting to provide a highly-productive output. Yet, to also skimp on lighting would

The Eagle Utility Desk Lamp, made by Eagle Electric Mfg. Co., Inc., Long Island City, is one of the most popular styles ever marketed. It has a 12" gooseneck arm, large reflector shade and a turn knob socket.

The model 122 of Fluorescent Lighting Laboratories is another modern adaptation of the popular gooseneck-type lamp.

Acme Lite Products Co., Congers, N. Y., makes the fluorescent model D-L which comes in several combinations of one or two tubes, AC high power, AC low power and DC. Its 24" arm and ball joints make it possible to adjust the lamp position to reflect its light in almost any direction.







be to waste money by reducing the efficiency of the clerical staff.

It is in this way that the field of supplementary lighting comes into its own. Desk lamps, or accessory wall fixtures, can and do provide an easily controlled method of adding to the light efficiency of any given area. The accountant, who needs a greater concentration of light during his work with figures, can simply switch on an additional fixture to give him the illumination his work calls for. And, this is done without impairing or appreciably altering the light level of surrounding areas.

Thus, adjustable or fixed lamps in areas where detailed work is performed can be an important aid in increasing the production and efficiency of the sections operation. This, too, will tend to raise the efficiency level of an entire office through lessening of errors and better coordination of the entire office's work flow.

As to the accessory equipment itself, it falls into two main categories—incandescent and fluorescent. As sort of sub-sections are flexible mounts, rigid mounts, wall-type mounts and a variety of combinations.

Choosing between incandescent and fluorescent lighting is a matter of individual choice more than a case of picking for a specific job. The main assets are very simple for both. The fluorescent, for instance, operates cooler and generally supplies more light for the dollar insofar as kilowatts are concerned. It also tends to bring out colors more nearly as seen in natural outdoor light. However, once the fixture has been designed for specific fluorescent tube, a brighter tube cannot be inserted.

The incandescent lamp, on the other hand, provides a high degree of light control by easily changing the wattage of the bulb, within the limits of the reflector. It also provides a higher concentration, or spotlight, for high level illumination over a limited area.

The design of today's lamps is also a matter of producing the greatest number to fit into a majority of locations, blending with almost any type of office decor.

Ultra-modern design, as well as strict classic simplicity, are marks of lamps planned for executive and reception room use. For the general office, while the design motif is modern, the functional value of the piece receives the greatest emphasis. It is in this area, too, that

(Please turn to page 172)

Prominent Users of Strathmore Letterhead Papers: No. 113 of a Series

One of the latest Monroe Adding-Calculators, capable of split-second computations automatically, without chance of error.

MONROE CALCULATING MACHINE COMPANY, ISC.

Complate Figuring Services

SERVICE OFFICE OF THE SERVICE OF THE SERV



no margin for error with QUALITY!

It is safe to say that the huge financial enterprises which are so necessary to our modern world could not have developed so readily without the mechanical calculating machine. In this respect, the contribution of the Monroe Calculating Machine Company to the world of business has been considerable. Monroe adding, calculating and accounting machines help turn the wheels of commerce all over the world with dependable efficiency.

The Monroe Calculating Machine Company prides itself both on the uniform precision of its many products and on the quality which invariably distinguishes the operation of its entire organization. Typical of this is the Monroe letterhead . . . distinctive and expressive on a Strathmore Letterhead Paper.

The fact that so many prominent firms insist on a Strathmore paper when they plan a letterhead is a clear indication of its quality. To observe an even more vivid demonstration of this innate quality, have your supplier show you samples of your letterhead design on a Strathmore paper. You will see why you, too, should count on Strathmore's expressive quality.

STRATHMORE LETTERHEAD PAPERS: Strathmore Parchment, Strathmore Script, Thistlemark Bond, Alexandra Brilliant, Bay Path Bond, Strathmore Writing, Strathmore Bond. Envelopes to match converted by the Old Colony Envelope Company, Westfield, Mass. NEW STRATHMORE THIN PAPERS: Strathmore Parchment Onion Skin, Strathmore Bond Onion Skin, Strathmore Bond Air Mail, Strathmore Bond Transmaster.

STRATHMORE

MAKERS OF FINE PAPERS

Strathmore Paper Company, West Springfield, Massachusetts
For More Information Circle No. 203 on Inquiry Card—Page 17

Columbia SILK GAUZE

TYPEWRITER RIBBON



From all over the country come reports of unmatched writing performance like these:

Secretary to a budget engineer:

"Silk Gauze outwears by three times any ribbon previously used."

Department Store Executive:

"Never found a ribbon that gives the service Silk Gauze does."

City Supervisor:

"Silk Gauze is definitely superior."

Lint free pure silk and an exclusive fluid inking process combine to give Silk Gauze Ribbons exceptional durability and exquisitely fine impression. Here's the ribbon for the executive secretary, or for anyone who wants sharp, clean, typing.

Your local Columbia Ribbon and Carbon dealer will be glad to show you that Silk Gauze Ribbons, because of quality, are economical. For a free copy of the Columbia illustrated ribbon and carbon reference book, use this coupon attached to your business letterhead.

COLUMBIA RIBBON A 7012 Herb Hill Ro			
Send the ribbon ar	d carbo	n refer	ence book.
Name			
Title			
Company		•	
Address			
City			
Zone Str	ite		

For More Information Circle No. 204 on Inquiry Card—Page 17 (Continued from page 171)

the greatest number of flexible, or adjustable, models exist.

Because of the modern influence, many of today's practical lamps do double duty as artistic additions to the office. Many, of course, are of a design that proves practical for use only in executive or reception areas. But, then, that is a matter of individual choice balanced against the over-all decorative scheme of the office.

It is significant to remember that a good general lighting plan is not necessarily the complete answer to a firm's lighting needs. An understanding of the amount of detail or close work specific jobs entail can act as a guide in providing the correct light for the job. As was said before, in effect, we can read only that which we can see.

It must also be remembered that supplementary lighting is just that. It is not, and never has been, intended to be the prime or sole source of illumination. Rather, it is an aid. A means of improving and increasing the quality and quantity of illumination to assure the proper and successful conclusion of a job.

According to scientific research, sight controls, or activates, nearly 87% of our muscular activities or reflexes. Lower the light and you correspondingly lower the physical activity.

Thus, there can be little doubt that in many cases, the judicious use of a desk lamp or other lighting accessory can be a valuable aid to company operations. If it is considered in view of its possible consequences, supplementary lighting can become a money-making investment by increasing office efficiency and production. It's that simple.

(Continued from page 166)

Old Town Corp., New York, has named Boris Yavitz as plant manager. He will headquarter at Old Town's Brooklyn plant.

Royal Typewriter Co., New York, has announced four managerial appointments. J. K. Davies, formerly district manager at Tacoma, Wash., has been named to head Royal operations at Burbank, Calif. To fill the vacancy at Tacoma, Royal has moved T. A. Etue, typewriter salesman at Seattle, to the post. Another change was necessitated with the death of H. C. Bishop, district manager of Columbia, S. C. H. F. Madden, former district manager in Birmingham, Ala., takes over that post.

Finally, it was announced, that D. K. Farr, formerly typewriter salesman in Atlanta, has been named to succeed Mr. Madden in Birmingham.

George W. Dick has been made manager of the institutional special department of International Business Machines Corp., New York. He will coordinate sales activities and the planning of applications of IBM equipment for the accounting needs of colleges and universities, libraries, hospitals and medical clinics.



A simple wiping with a disposable cloth wafer, impregnated with an active germicide harmless to human beings, sanitizes and deodorizes telephone mouthpieces. Named "tel-Ocide", it is packed in jars of 100 and is distributed by General Scientific Equipment Co., Philadelphia.

Circle No. 83 on Inquiry Card-Page 17



For More Information Circle No. 205 on Inquiry Card—Page 17 PURCHASING Blackboard and bulletin board panels have added flexibility to the new movable office partitions made by Arnot Jamestown Division, Aetna Steel Products Corp., New York. Specifically designed for use in editorial offices, small conference rooms, drafting and planning offices, and other areas where desirable, the blackboards and bulletin board panels are interchangeable with panels of conventional clear or frosted glass.

Circle No. 84 on Inquiry Card-Page 17

A filter that successfully screens out ultra violet rays from the fluorescent light used in office photo copying machines is now an integral part of the Hecco-kwik copiers made by Hunter Photo Copyist, Inc., Syracuse, N. Y. Hunter claims that the screen makes possible precise, high contrast prints without trial exposure settings and wasteful trial copies.

Circle No. 85 on Inquiry Card-Page 17

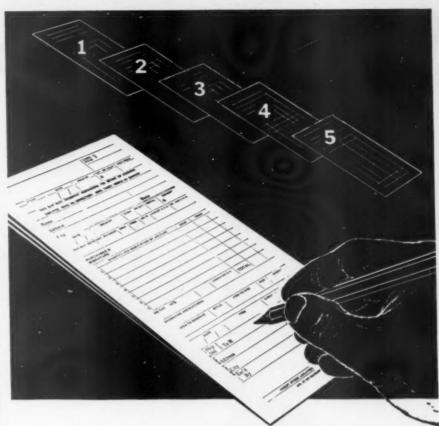
A leaflet, "Streamling Office Systems in Small Business", is now available from the Small Business Administration, Washington, D. C. The leaflet explains in detail some suggestions for bettering certain office operations. These ideas are contained in such subsections as: typewriters, printing calculators, sorting operations, simplified accounts receivable accounting, and small payrolls.

Circle No. 86 on Inquiry Card-Page 17



Shredmaster Corp., a division of the Self Winding Clock Co., Newark, N. J., is now marketing the Shredmaster Bantam 10, a portable shredding machine. About the size and weight of a typewriter, the machine quickly destroys confidential and obsolete papers, regardless of weight or grade. Shreds fall freely and there is no dust. Circle No. 87 on Inquiry Card—Page 17

FOR FURTHER INFORMATION
ON PRODUCTS IN THIS ISSUE
PLEASE USE INQUIRY CARD
ON PAGE 17



1 Baltimore Business Form takes the place of 5

Recently, a large retail chain had a costly problem. They handled five different types of sales, with five different forms, each of which had to be followed through multiple operations.

Management discussed their problem with Baltimore Business Form experts. Together they designed and produced one Form—readily adaptable to other types of stores—that could be used for all sales, and could be easily followed through all voucher processing. Result: Time and money saved in both selling and office operations.

WHAT'S YOUR PROBLEM? Since 1916, Baltimore Business Form's design and manufacturing experts have solved countless problems in serving over 60,000 of the nation's leading business houses. Their wealth of experience in designing forms to fill specific requirements ideally qualifies them to help you. Remember, often a single suggestion may save hundreds . . . even thousands . . . of dollars for your company. So, write us for help in solving your business forms problems.

BALTIMORE BUSINESS FORMS

Saving time and reducing costs in business and industry

The Baltimore Salesbook Company

The Baltin 3142 Fre	more	Sck	ile Av	sb	100	k	C	o	mi	pe	in	y	. :	29	,	M	ai	У	la	ne	d										
We are int	ereste	ed i	n s	ee	ing	S	am	P	es	0	fl	Ba	Iti	mo	ore	B	us	ine	988	F	ori	ms									
Name																									 		 			 	
Company																							 		 		 			 	
Type of Bu	siness																								 		 			 	
Address																						* *	 		 		 	 	*	 	
City																			Si	tal	le				 		 0.4	* *		 	

AMONG THE ASSOCIATIONS





John D. Morgan, Jr., of the Office of Defense Mobilization tells about the U.S. stockpiling programs and their effect on the nation's economy.

Economic Optimism Expressed By Speakers At District 9 Meeting

NEARLY 400 members of District 9, N.A.P.A., met in Providence, R. I., during October for a fast-moving, highly informative, purchasing conference. Made up of the associations of Connecticut, New England, Rhode Island and Western Massachusetts, the District 9 delegates took one full day to accomplish their common goal.

Beginning at 9:30 in the morning, when H. Randall Smart, Jr., general conference chairman and immediate past district vice president, called the session to order, the assemblage heard a carefully selected group of speakers on a variety of subjects.

Herbert Layport, national director of the New England Purchasing Agents Association, presided during the morning session and introduced Carl A. Tootill, district vice president, who reported on the "Affairs of District No. 9, N.A.P.A." He was followed by Simon D. Strauss, vice president and sales manager, American Smelting & Refining Co., New York, who spoke on "The Outlook Non-Ferrous Metals". He pointed out that much of the price weaknesses of the metals group have been partially eliminated and wide fluctuations are not in the foreseeable future.

"The United States Supply Position in the Field of Metals-Minerals" by John D. Morgan, Jr., Office of Defense Mobilization, Executive Office of the President, followed and clearly outlined how the U. S. long range stockpiling program works and its effect on metals-minerals price structure.

Heading up the second half of the morning's program was Richard L. Bowditch, chairman of the board, C. H. Sprague & Son Co., Boston, who was scheduled to speak on "The Industrial Future of New England". However, having headed the U.S. Chamber of Commerce, recently, Mr. Bowditch gave his views assembled from his extensive travelling in that post. He derided the prophets of "doom and gloom" for their lack of faith in their fellow Americans. He pointed out that in most cases, around the country, business was good and would probably prove better.

The final address for the morning was by John A. Hill, president, Air Reduction Co., Inc., N. Y., who graphically described some of "Management's Views with Respect to the Purchasing Function".

During the conference luncheon, (Please turn to page 182)



John Hill, president, Air Reduction Co., Inc., gives "Managements Views with Respect to the Purchasing Function". Seated is the previous speaker Richard L. Bowditch.



Anticipating a probable upturn in the nation's economic picture, Martin Gainsbrugh, economist, details his opinions for the District 9 delegates.

HERE'S MONEY SAVING TIP "3

from the GOULD Plus-Performance Plan

HOW TO CHANGE CHARGING PLUGS

Although plugs and receptacles are of rugged design, they are not indestructible and can be damaged by misuse. Also, it may be necessary to change the size or type of plug. The Gould Plus-Performance Plan shows you how in three, simple, easy steps.

YOU CAN DO IT YOURSELF IN YOUR OWN SHOP



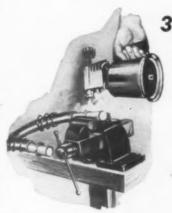


Break Circuit by Removing a Connector

This opens the circuit and prevents short circuit, which might cause accidental injury to personnel or equipment.

2. Remove Lugs and Replace

Terminal lugs are held in the plug by bolts or screws which, when removed, will permit the lugs to be withdrawn for replacement. After withdrawing cable and lugs from plug, should it become necessary to replace lugs, heat enough to melt solder sufficiently to free lugs from cable. Clean and tin wire . . . place in terminal and re-solder.



Reassemble Terminal Lugs in Charging Plugs

In reassembling cables into plug, make sure that the negative wire is placed in the negative side and the positive wire in the positive side. If the terminal leads are reversed in reassembling, the battery will be placed on charge in reverse and badly damaged.



GOULD Batteries

GOULD-NATIONAL BATTERIES, INC. TRENTON 7, N. J.



Air Conditioning and Lighting



For Mine Shuttle Cars and Locomotives



For Electric



For Diesel Locomotive



For Standby and Emergency Power

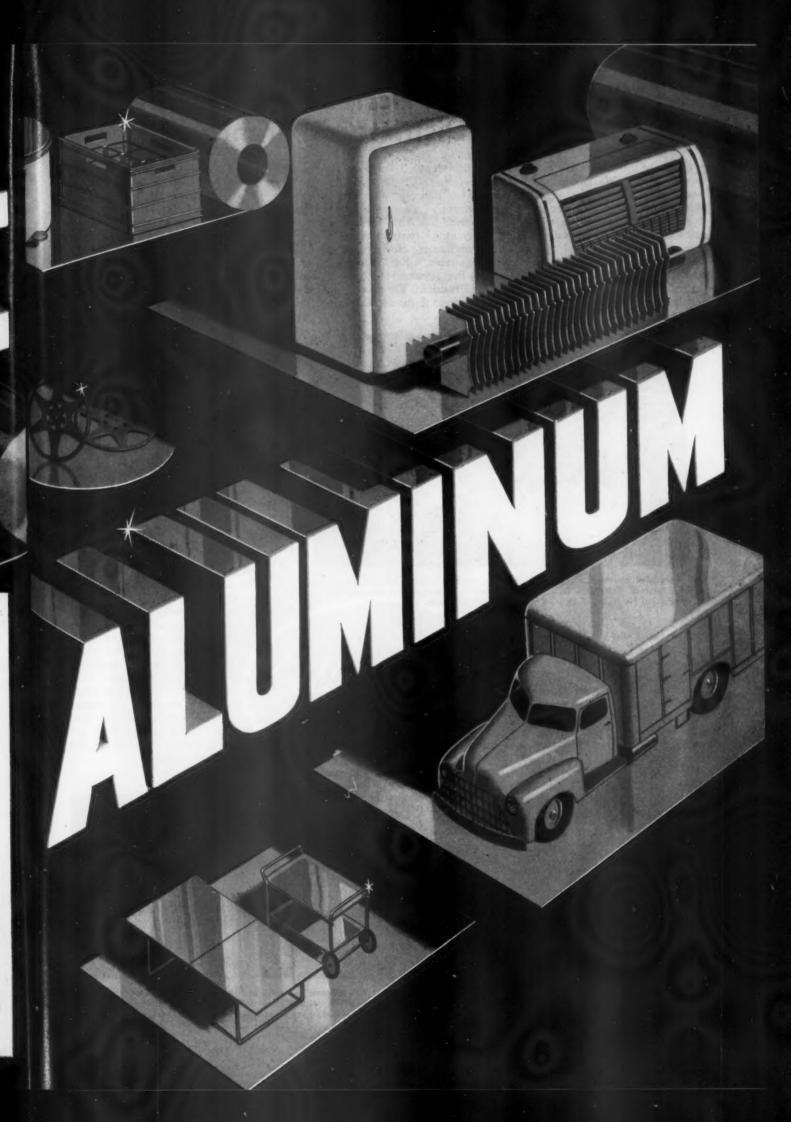
©1954 Gould-National Batteries, Inc.

Always Use Gould-National Automobile and Truck Batteries

There are many ways in which you can cut battery maintenance costs. Doing simple jobs like this, in your own plant, is the answer. The Gould Plus-Performance Plan gives you the "know-how" to "do it yourself." Send for the complete plan and start saving money. Mail this coupon TODAY!

B	A	T	T	E	R	Y	1	N	F	0	R	M	A	T	ı	0	N	1	Н	E	A	D	Q	U	A	R	T	E	R	5
									-		-					T		-	7	M	-									





New Purchasing Horizons Unveiled at Eighth District Conference

Theme of the Eighth District Conference held in Washington recently was "Purchasing Horizons Today and Tomorrow." The conference lived up to its theme in every respect. Programs were top notch and, as the conference closed, delegates were heard to say that this was the best district conference yet.

First day of the conference was devoted to a council meeting and

really went all out. Star attractions were the Mills Brothers.

The program for the following morning's session, when the conference officially opened, explained why the conference theme was "Purchasing Horizons Today and Tomorrow." Ed Krech introduced the first speaker, Dr. Neil H. Jacoby, of President Eisenhower's Council of Economic Advisers. In his address

to produce and sustain prospertiy, given a reasonable time to work out their full effects we shall assuredly achieve our goal of enduring prosperity."

Jessop Steel President Frank B. Rackley was the second speaker. The youthful, dynamic steel executive spoke on "Purchasing Comes Into Its Own." He described the profit making role that can be played by aggressive, imaginative buyers. Particularly interesting to the audience were Mr. Rackley's views on compensation for purchasing. He came out in favor of a system whereby a buyer's performance in saving money is measured and the buyer receives additional compensation based upon such performance.

Honored at the luncheon meeting was NAPA President Howard Ahl. "NAPA Horizons" was the subject of Mr. Ahl's talk. He described the progress that had been made in building the prestige of the purchasing profession since NAPA was founded and predicted that further strides forward would be made in the future

The afternoon session started off with a talk by H. R. Michel of Celanese Corporation on "Purchasing Horizons—Today." Then came a radical departure from the usual line of programs. An actual management meeting of the mythical "Eastern Electrical Appliance Co." was presented. Eastern's profits had been declining steadily; the meeting was devoted to cutting costs of purchased materials since they are the largest single element in the company's sales dollar.

(Please turn to page 192)



Scheduled for the conference banquet was the Men's Glee Club of Chesapeake and Potomac Telephone Co. Hurricane "Hazel" permitted but one member to appear but his Irish ballads were received with tremendous enthusiasm.

tours of the Federal Bureau of Investigation and the National Bureau of Standards. In addition, there was a very interesting Products Exhibit which was available for inspection during the entire conference.

In the evening, the conference really got rolling with an "Early Bird" dinner. The entertainment committee including George A. Frediani and Alvin M. Sebastian "Economic Policies for Stability and Growth," Dr. Jacoby described what the Administration is doing to foster further economic growth and prosperity.

Dr. Jacoby said, "The combined potential effects of the government policies initiated since mid-1953 to stimulate the economy are of the order of billions of dollars. Prima facie, these policies are adequate





"Management" of the mythical "Eastern Appliance Co." discusses how it can improve its profit position. "General Manager" Wilson B. Wight is speaking. Seated is his "Operating Committee" including, left to right, H. R. Michel, James M. Stone, Alfred H. Hollenbeck, Walter Smith, Leonard Thomasma, and Raymond Lochiel. (Photo at right) Enjoying the witty opening remarks of Secretary of Commerce Weeks are, left, Clifton Mack and, right, L. E. McCorquodale.





Top Flight Program Attracts Record Attendance at Second District Conference



Howell Adair of Sun Oil Company welcomes conference speakers George Renard and Bruce Henderson. Ben Newbery, former N.A.P.A. President from Dallas, stands by.



Program Chairman J. D. Brown (left) with Stuart F. Heinritz, Editor of PURCHASING Magazine, and R. E. Whitten, who handled registrations for the record breaking conference attendance.

of more than 800, and a topflight program keyed to current purchasing interests, the Eighth Annual Southwest Purchasing Conference at Dallas, October 27th and 28th, topped all previous records. Every association in District 2, N.A.P.A., was well represented, including one delegate from Mexico. A meeting of the District Council was held in conjunction with the conference.

Early arrivals—and that takes in the vast majority of those attending the conference—gathered with their ladies in the Crystal Ballroom of the Baker Hotel on Tuesday evening for a most enjoyable "Round-Up" party, including a cocktail hour and buffet supper.

The conference got down to serious business on Wednesday morning, when General Chairman Charles F. Wilson called the meeting to order in the Terrace Room. Messages of greeting were given by Maynard E. Robertson, president of the host association, Earl Cabell, president of the Texas Manufacturers Association, and H. E. Kaiser of Bartlesville, Okla., N.A.P.A. Vice President for District 2. The featured speakers at this session were G. W. Howard Ahl of New York. N.A.P.A. President, and T. S. Paulsen of the Russell-Miller Milling Co., Minneapolis, Minn., who spoke on "The Salesman through the Purchasing Agent's Eyes". In a witty but solid address, Mr. Paulsen stressed the tremendous part that selling organizations have played in industrial development and distribution, and how alert purchasing men can do a better job by encouraging and working with the salesman.

Speakers at the Wednesday afternoon session were M. A. Montrose of the Hughes Tool Co., Houston, whose topic was "Observation on International Trade"; and Bruce D. Henderson, Vice President of Westinghouse Electric Corp., Pittsburgh, who drew upon his personal experience as director of the purchasing activities of that concern to set forth effective methods of "Training Purchasing Department Personnel." Purchasing performance depends on the competence and initiative of purchasing men, and a carefully planned, consistent program of training gets results.

An entertaining feature of this session was a skit entitled "Changed Climate", presented by members of the Houston Association. The scene was laid in the waiting room of a

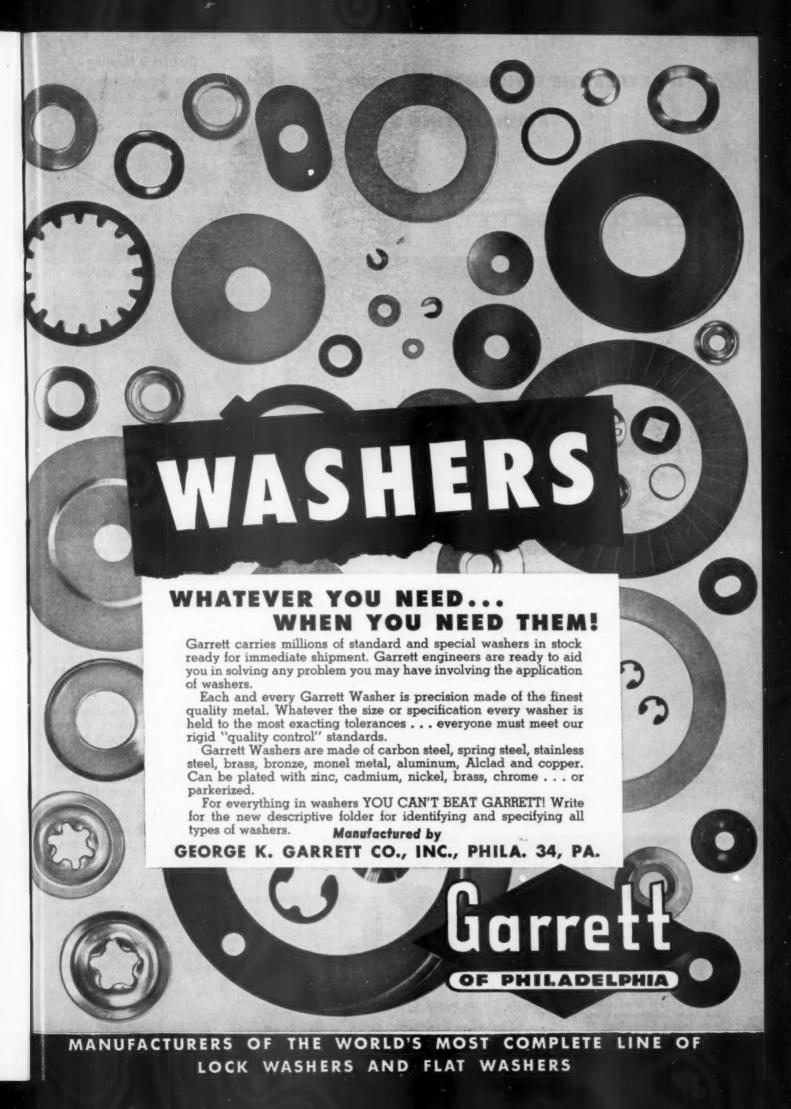
(Please turn to page 196)

An all-Houston cast presented a skit at the conference on behalf of the Educational Committee. The players are: W. J. McSherry, Napco Paint Co., N. E. Waldie, Humble Oil; Paul Berry, James Buto Co. and Frank Scott, Baker Oil Tools; and Kay Walker, wife of Gene Walker, United Gas, as the attractive secretary.

Prominent figure at the conference was Alvin Dark, Magcobar sales representative from Houston, who takes time off during the summer months to serve as field captain of the World's Champion New York Giants baseball team. Here, he autographs a baseball for John Guynes, P.A. for Magnolia Petroleum Co.







AIR HANDLING SYSTEM...

Standardaire Blower

INSTALL

The Standardaire Blower moves more air . . . with less wear, maintenance and power cost than blowers of equal weight and size.

By employing a proved principle of compressing air on a modified adiabatic cycle, the *Standardaire* Blower provides a wide range of pressures with a minimum of internal losses. The cycloidal form, screw type rotors draw the air in and discharge it smoothly without shock from the pockets which form between the precision machined rotors.

Write today for further information.

READ STANDARD

Read Standard also manufactures a complete line of chemical mixers for laboratory and industrial use. For information write, Read Standard Corp., York, Pennsylvania BLCWER-STOKER DIVISION 370 Lexington Avenue New York 17, New York



District 9 Meeting

(Continued from page 174)

Professor Thomas F. Lambert, Jr., Boston University School of Law, presided his views on the political and economical aspects in this "age of anxiety".

The afternoon session, under the guidance of T. H. Daley, national director, Purchasing Agents Association of Connecticut, got under way, with "The Business Outlook" by Martin R. Gainsbrugh, chief economist and director, Division of Business Economics, National Industrial Conference Board.



District 9 Vice President Carl A. Tootill tells about the "Affair of District 9, N.A.P.A.".

"The New Concept of Purchasing" was a detailed accounting by Bruce D. Henderson, vice president, Westinghouse Electric Corp., Pittsburgh, of how Westinghouse has endeavored to create a sound functioning, efficient purchasing system and department.

Midway in the afternoon session, Charles Haffey, purchasing agent, Charles Pfizer & Co., Inc., Groton, Conn., explained the steps taken by his company in adopting standards for many items.

As a fitting close to the afternoon session, George A. Renard, executive secretary-treasurer, N.A.P.A., gave his views on economics and other subjects of particular importance to the New England PA's in his talk "From One P.A. to Another".

After a social hour, the delegates assembled for the district banquet and an opportunity to hear N.A.P.A. President Howard Ahl, general purchasing agent, Phillip Morris & Co., Ltd., Inc. President Ahl, in a clearly outlined manner, pointed out some of the responsibilities of the purchasing agent and the purchasing function, as well as ways of improving the value of the profession.

Carl Tootill adjourned the conference and the meeting became part of the history of N.A.P.A.



New Taylor laminates

are premium in everything but price

Y^{OU'LL} LIKE everything about this new family of Taylor paper-base laminates—including their price. They're a new kind of hot-punch laminate, uniform all the way through, with no surface overlay of resin.

In insulation resistance, water absorption, power factor, flame retardance and dimensional stability, they'll meet or exceed your strictest specifications. And they punch and stake so well . . . with smooth surfaces and clean edges . . . that you can produce complex parts with maximum utilization of each sheet.

Four different grades are available in production quantities, in standard sheet size of approximately 49" by 49":

XXXP-301...the top grade laminate with unusually high insulation resistance, lowest water absorption...excellent punching and staking.

XXP-351 . . . a high grade laminate with most of the properties of XXXP-301, at lower price.

Grade 353 . . . a quality grade laminate priced for economy, with outstanding electrical and physical properties.

Grade 354... an easily fabricated grade having low water absorption and good stability ... priced for real savings.

Taylor Fibre Co. Plants in Norristown, Pa.; and La Verne, Calif. Branch offices in Atlanta; Boston; Chicago; Cleveland; Dayton; Detroit; Indianapolis; Los Angeles; Milwaukee; New York City; Philadelphia; Rochester; San Francisco; St. Louis; and Tolland, Connecticut. Distributors in Grand Prairie and Houston, Texas; Jacksonville, Florida; New Orleans, Louisiana; and Toronto, Ontario.

WRITE TODAY FOR FULL SPECIFICATIONS, AND FOR ENGINEERING ASSISTANCE IN APPLICATION

TAYLOR
Laminated Plastics
Vulcanized Fibre

For More Information Circle No. 212 on Inquiry Card-Page 17

O

- , y

000

9th Annual NIGP Conference Accents Sound Public Purchasing Policies

N the first page of the program booklet for the Ninth Annual Conference and Exhibit of the National Institute of Governmental Purchasing, held in New York recently, are three sentences that appropriately define the successful gathering of the group.

"Attending a conference and exhibit profitably is hard work. The first step is to recognize conference and exhibit attending as an opportunity. Don't lose sight of the main idea—to take back something of future benefit."

Backed by these statements and further supported by NIGP's slogan, "More Value For The Tax Dollar", the delegates crowded into the Keystone Room of New York's Hotel Statler on October 11th to send the conference off in high fashion. With President C. L. Magnuson, supervisor of purchases, State of Connecticut, presiding, the initial stages, of greeting and opening the conference rapidly passed to the more concrete problems of public purchasing.

The entire morning was spent in a lively discussion on "Development and Use of Standard Specifications" under the leadership of Herbert S. Schenker, superintendent of standards, Procurement Department, City of Philadelphia, After Mr. Schenker detailed the steps Philadelphia has taken in making full use of laboratory, testing and inspection facilities in adopting citywide standards on a host of items, NIGP delegates on the floor questioned, interpreted and explained their methods and problems, developing standards for the purchase of everything from pencils to car-

bon paper to white paint for safety markings on streets and highways.

During the group's Monday luncheon, President Magnuson introduced Stuart F. Heinritz, editor of Purchasing, as guest speaker. Mr. Heinritz pointed out the value to the public purchasing profession of using newspapers and publications to bring the story of public purchasing to the people. He stated

seminars held by the New York City Purchasing Department in which buyers, storekeepers and others interested in the market conditions meet to give brief summaries and comments on their expectations for the following three to six months. A. L. McMillan, director of purchase, New York City, and NIGP's program committee chairman, acted as moderator. With him were other members of the N. Y. Purchasing Department; Abraham Giniger, Samuel Adler, Louis Raphael, Thomas Hinchey, Maurice Moore and George Basso.

CHANGE OF COMMAND-L. Magnuson (seated, right), supervisor of pur-chases, State of Connecticut, president of NIGP for 1953-54, becomes immediate pastpresident as B. L. Gill (seated, left), city purchaspresident ing agent, Madison, Wis., takes over as NIGP president for 1954-55. Other new officers, standing, left to right: John G. Krieg, city purchas-ing agent, Cincinnati, vice president; O. Grant Brush, city purchasing agent, Austin, Texas, treasurer; and John W. Huffman, city purchasing agent, Richmond, vice president.



that purchasing is newsworthy and that the purchasing agent should realize that even relatively matterof-fact procedures can be made interesting to the public and thus aid in increasing the stature and importance of the purchasing profession as a whole.

The first day's session ended up with a special seminar on "Survey of Market Conditions". This was a demonstration of periodic economic After special breakfast meeting for state purchasing agents, educational buyers, etc., the delegates met for a seminar on "Sources of Supply" under Chairman John F. Ward, city purchasing agent, Chicago. After a short address, Mr. Ward turned the NIGP members over to the exhibit area with the statement, "Here are your sources of supply—your exhibitors."

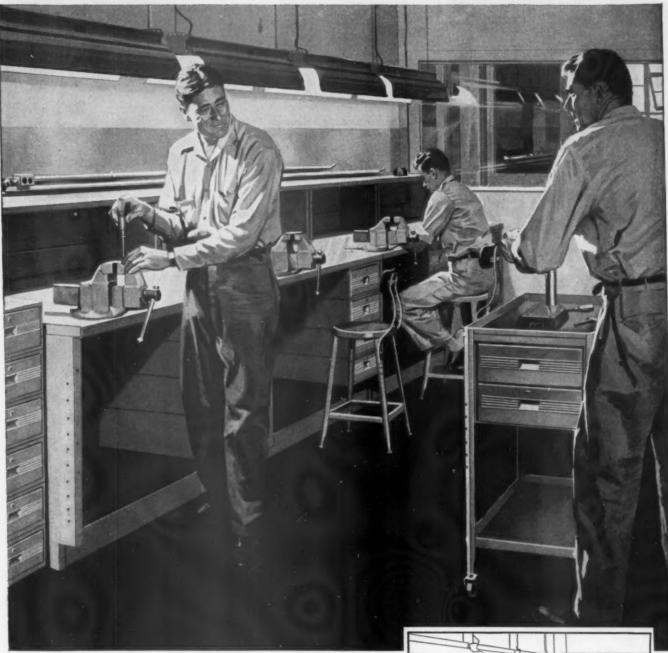
Roger E. Gay, president, American Standards Association and president of the Bristol Brass Corp., Bristol, Conn., was introduced as the featured speaker at the NIGP luncheon Tuesday. Due to loss of his voice, Mr. Gay, after a short greeting, introduced his ASA associate, Admiral Hussey, who presented Mr. Gay's talk on "Let's Speak the Same Language", an indication of how standardization has progressed in the field of governmental purchasing.

Pointing out the acceptance of standardization programs, Mr. Gay's talk claimed:

"Standard writing itself is becoming more far-sighted. In the past, a standard usually came about (Please turn to page 186)

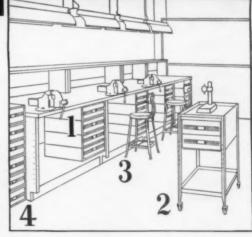


Al Hall, executive director, NIGP, extends his greetings to the assembled delegates. To Mr. Hall's left are Louis Cook, superintendent of school supplies, New York City, general conference vice chairman; and A. L. McMillan, director of purchase, New York City, program committee chairman.



MODERNIZING YOUR LAB? Fit it up FAST and at LOW COST with standard HALLOWELL Shop Equipment

You'll save time—you'll save money—and you'll get the adaptability that only a full line of interchangeable equipment can give you. Let us help you engineer your space for maximum efficiency. Write for complete details about standard readymade Hallowell Shop Equipment—stocked by leading distributors everywhere. Standard Pressed Steel Co., Jenkintown 31, Pa.



- 1. Cabinet Benches
- 2. Tool Stands
- 3. Stools and Chairs
- ds 4. Drawer Tiers

HALLOWELL SHOP EQUIPMENT DIVISION





For More Information Circle No. 214 on Inquiry Card—Page 17

(Continued from page 184)

only when chaos, confusion and waste demonstrated the crying need for standardization. Now we have come to the stage where standardization in advance of need to avoid chaos and confusion is being accepted as a valid idea. In some industries, notably in electronics, we are beginning to write standards on a pre-planned basis, instead of waiting until someone yells for help."

The conference's afternoon session was devoted to five separate round table discussions on critical public purchasing problems. Frank L. Bersch, administrative assistant,



New York City Council President Abe Stark greets the NIGP delegates for His Honor, Robert F. Wagner, mayor of New York.

Department of Purchase, City of Richmond, covered "Stores and Inventory Control". From the legal standpoint, Nelson Rosenbaum, attorney-at-law, New York City, held a lively session on "Application of Business Law to Public Purchasing, Including F.O.B. Point, Fair Trade, Warranty and Guaranty, Buy-Against Procedures, Competition and Reasonable Prices." On "De-

President Magnuson and Roger E. Gay, president, American Standards Association and president, Bristol Brass Corp., talk over matters prior to Mr. Gay's luncheon address.





Standard specifications get a work-out from Herbert S. Schenker, superintendent of standards, Procurement Department, Philadelphia, before the matter is thrown open to discussion from the floor.

velopment and Use of Requirement Supply Contracts", Joseph W. Nicholson, city purchasing agent, Milwaukee, presented his audience with considerable information developed during his long public purchasing experience.

A special problem, "Purchase of Special Purpose Equipment Including Fire Apparatus, Fire Hose, Garbage and Refuse Trucks", was the assignment of Harold deWyk, city purchasing agent, Dearborn, Mich. In another group, the continual "hot" problems of "Small Orders—Pickup and Emergency Orders" developed a lively exchange of ideas under the guidance of Chairman William J. Burke, city purchasing agent, Corpus Christi, Texas.

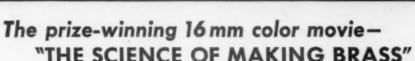
The final day's session started off with a talk on "Development of Preferred Standards in a Public Purchasing Agency" by Harry A. McArdle, chief of purchase, New York City Housing Authority. Later in the morning, Irving H. Golder, president, Certified Microfilm, Inc.,

(Please turn to page 188)

Speaker at one of the organization's luncheons, Stuart F. Heinritz, editor, PURCHAS-ING, explains the need for publicizing purchasing activities.







"In 30 minutes I learned more about making brass than in a day's trip through the mill."

That's a typical reaction to this dramatic Chase film! "The Science of Making Brass" takes you on a guided tour of Chase mills-shows you exciting, full-color close-ups of every step in the making of brass and other copper alloys in the form of sheet, rod, wire and tube. If you work with metals, it's an experience you won't want to miss!

"The Science of Making Brass" is a 16 mm, full-color film with a running time of 29 minutes, and will be loaned to you on request. To arrange a showing, clip and mail the coupon below.

It won these PRIZES First Prize, International Competition for Technico-Industrial Documentary Films, Turin, Italy and Venetia Diploma at

It won this PRAISE

"Far superior..." (Colorado manufacturer) "Excellent in every respect..." (Large eastern manufacturer) "Finest ever seen..." (Texas distributor).



Venice Festival.

BRASS

WATERBURY 20, CONNECTICUT . SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper (tsales office only)







To: Chase Brass & Copper Co., Incorporated Waterbury 20, Conn. Dept. Purc-1254

Gentlemen:

Please send me more information on your 16 mm, full-color film, "The Science of Making Brass." I would like to arrange for a showing on or about

POSITION.

For More Information Circle No. 215 on Inquiry Card-Page 17

DECEMBER, 1954

CUSTOM MOLDING for every need



Let us quote on YOUR Requirements

job. You will have no regrets if you deal with

KUHN & JACOB MOLDING & TOOL CO.

1221 SOUTHARD STREET, TRENTON 8, N. J.

CONTACT THE

K & J

REPRESENTATIVE

NEAREST YOU

Kuhn & Jacob.

S. C. Ullman, 55 W. 42nd St., New York, N. Y.
Telephone—Penn. 6-0343
Wm. T. Wyler, Box 126, Stratford, Conn.
Telephone—Bridgeport 7-4293
Wm. A. Chalverus, Carson Road, Princeton, N. J.
Telephone 1-3170J2

For More Information Circle No. 216 on Inquiry Card-Page 17

(Continued from page 186)

New York City, outlined the importance, development and value of "Microfilming Public Records and Documents". As a final note for the morning session, Wade H. Hannah, city purchasing agent, Columbia, S. C., led the group in a discussion of "Public Purchasing Problems". This clinic dealt with the organization and administration of public purchasing departments.



Chairman during a lively discussion on small orders and emergency orders was William J. Burke, city purchasing agent, Corpus Christi, Texas.

In the wind up of the conference's proceedings, in the afternoon, two reports held particular importance. Alvin J. Holm, city purchasing agent, Los Angeles, presented his report of the NIGP committee on Federal Excise Taxes. He was followed by Leo Weil, commissioner of purchases and supplies, Cleveland, with a report on Federal Surplus Property.

solid

this pend

cant

wide

chin

Styl

Hec

Finally, President Magnuson introduced the new NIGP officers for 1954-55; B. L. Gill, city purchasing agent, Madison, Wis., president; John G. Krieg, city purchasing agent, Cincinnati, Ohio, vice president; John W. Huffman, city purchasing agent, Richmond, Va., vice president; and O. Grant Brush, city purchasing agent, Austin, Texas, treasurer.

As the final gavel sounded, a last vote of thanks was extended to committees which had been responsible for the success of the conference: Joseph V. Spagna, commissioner of purchase, New York City, general conference chairman; Louis J. Cook, superintendent of school supplies, New York City Board of Education, general conference vice chairman; A. L. McMillan, director of purchase, New York City, program committee chairman; and John J. McHugh, Amplex Corp., Brooklyn, exhibitors advisory committee chairman.

For More Information Circle No. 217 on Inquiry Card—Page 17→ Purchasing Here's How

GITS

Provides

Low-Cost Replacement Of YOUR Lubricating Devices



OIL HOLE

This model is designed to fit into a simple drilled hole. Ideal for use on small motors, generators, starters and light machinery—for dependable oil hole protection at moderate cost. Larger sizes frequently used as filler caps on tanks or reservoirs. Style R—No. 305.



OIL

Accurately machined from a solid brass one-piece forging, his oil cup permits safe, dependable application of lubricant at very low cost. Used widely on motors and small machinery requiring side oiling. Style L—No. 1202.



SIGHT GRAVITY FEED OILERS

Rate of oil flow regulated by needle valve, directly observed through sight glass in stem.

Shut-off knob does not affect needle valve adjustment. Visible oil supply. Non-breakable. Tops in convenience and dependability, at low cost. Style NFU—No. 3602-A.



GEAR CASE GAUGES

This oil gauge plug permits instant checking of oil level within a transmission or gear case. For use where construction permits insertion in tapped hole. A valuable addition to any such equipment — at very low cost. Style BW—No. 4042.

FORGED BRASS GAUGES

Heavily constructed in a single piece from forged brass — this

gauge is also drilled to permit generous oil passage. Available in many stock sizes—and in special heights and lengths. For dependable service with the greatest economy. Style FG—No. 4204.



For use where rate of oil flow must be regulated to suit changing operating conditions.



Too much machine "down-time"? Too much time wasted in servicing your machinery? Perhaps some old, worn lubricating devices need replacement. Maybe a different, more modern device will do the job more efficiently. Whenever you replace, specify GITS Lubricating Devices—the widest selection available anywhere, right in stock. The items pictured above are only a few of our many thousands of lubricating devices. Send NOW for your free Catalog.

GITS BROS. MFG. Co.

The Standard For Industry For Almost Half A Century

1865 South Kilbourn Avenue Chicago 23, Illinois

Clip this page for handy "rough reference"



Rex High Speed Steel ... ALL grades of Tool Steel (including Die Casting and Plastic Die Steel, Drill Rod, Tool Bits, Hollow Drill Steel and Hollow Tool Steel Bars) ... Stainless Steel (Sheets, Bars, Wire, Billets, Electrodes) ... Max-el ... AISI Alloy, Onyx Spring and Special Purpose Steels

CRUCIBLE

first name in special purpose steels

54 years of Fine steelmaking

WAREHOUSE SERVICE

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

Branch Offices and Warehouses: ATLANTA • BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI • CLEVELAND • DAYTON
DENVER • DETROIT • HOUSTON • INDIANAPOLIS • LOS ANGELES • MILWAUKEE • NEWARK • NEW HAVEN • NEW YORK • PHILADELPHIA • PITTSBURGH
PROVIDENCE • ROCKFORD • SAN FRANCISCO • SEATTLE • SPRINGFIELD, MASS. • ST. LOUIS • ST. PAUL • SYRACUSE • TORONTO, ONT. • WASHINGTON, D. C.

Creating New and Better Basic Chemicals for American Industry



General Chemical Research Laboratory located adjacent to Allied Chemical's Central Research Laboratory in Morris Township, New Jersey

This is General Chemical's new Research Laboratory in Morris Township, New Jersey. Here, General will expand and intensify its diversified research in industrial, scientific and agricultural chemical fields.

A highly important phase of the Laboratory's activities is studying ways to make good products better, more abundant and more economical. This includes continuous product and process developments with sulfuric acid and other basic chemicals, as well as with General's extensive lines of reagents and fine chemicals, and agricultural insecticides and herbicides.

"Genetron" Organic Fluorine compounds—already widely being used in refrigeration, air conditioning, and aerosols—typify the new products for modern living coming out of the Laboratory's current investigations. Many others will follow as today's experiments become commercial realities.

The research here forms the foundation for large-scale development programs at other General Chemical laboratories near Philadelphia and Baton Rouge, La. It is also closely coordinated with related phases of Allied Chemical's central research program . . . all aimed toward creating new and better chemicals for American Industry—and you!



GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION 40 Rector Street, New York 6, N. Y.

BASIC CHEMICALS FOR AMERICAN INDUSTRY

Sulfuric and other Acids
Alums
Genetrons® and other fluorine derivatives
Phosphates
Sodium Compounds
Baker & Adamson® Reagents & Fine Chemicals

Orchard Brand® Insecticides, Fungicides, Herbicides

For More Information Circle No. 219 on Inquiry Card-Page 17



GINDET

100% ACTIVE - 100% SAFE!

NEW LIQUID SYNTHETIC DETERGENT

CINDET can be used in hard or soft water for hundreds of cleaning needs. It LOOSENS dirt quickly, LIFTING IT AWAY AND HOLDING IT IN SUSPENSION in a mass of creamy suds. Removes stubborn stains, rubber marks.

CINDET works fast, dries quickly, can be used safely on anything water itself won't harm—including the user's skin. Use CINDET to strip old water emulsion waxes from floors quickly and surely, AND FOR ALL GENERAL CLEANING PURPOSES.

CINDET is approved by the Rubber Manufacturers' Division of the Rubber Manufacturers' Association.

Write for Dolge literature on CINDET, and have your DOLGE SERVICE MAN demonstrate its easy, economical use.

DO THE WORK! DO LGE

For More Information Circle No. 220 on Inquiry Card—Page 17

SANITARY SURVEY

DIGE SERVICE MAN



with this WISCONSIN-POWERED UNIT!

This sturdy unit takes a six-foot-wide bite in any kind of snow, loading from 7 to 12 cubic yards of snow per minute in trucks or throwing it clear. Builder is Krause Industries, Baraboo, Wisconsin and the snow blower is constructed to mount easily and quickly on the Hough Payloader Tractor-Shovel. A Wisconsin Heavy-Duty Air-Cooled Engine provides the power. Equipment builders and buyers are choosing Wisconsin Engines over all other types in the 3 to 36 hp. range . . . as the most satisfactory and fool-proof power to fit both the *job* and the *machine*. You'll find a model and size available to fit every power requirement . . . 4-cycle single-cylinder, 2-cylinder and V-type 4-cylinder models, 3 to 36 hp. Write for Bulletin S-164.



WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines
M!LWAUKEE 46, WISCONSIN

For More Information Circle No. 221 on Inquiry Card-Page 17

Eighth District Conference

(Continued from page 178)

Panel members included experts in all phases of management. They were, in addition to H. R. Michel who served as purchasing agent: Alfred H. Hollenbeck, works man-



Jessop Steel President Frank Rackley gives his views on the role purchasing should play as part of the management team."

ager, Gifford-Wood Co.; James M. Stone, manager production and purchasing, American Type Founders Inc.; Walter Smith, chief engineer, Murray Manufacturing Co.; Raymond G. Lochiel, vice president and treasurer, Capital Airlines; Leonard Thomasma, general manager, Todd Co.; and Wilson B. Wight, purchasing agent, Bausch & Lomb Optical Co. Judging by the questions and discussion the meeting provoked from the floor, it was a resounding success in and object lesson in doing a better purchasing and management job.



Discussing the current business outlook and the Administration's economic policies is Dr. Neil Jacoby of the Council of Economic Advisors.

Highlight of the conference was the banquet and dance. The group was privileged to have as speaker the Honorable Sinclair Weeks, Secretary of Commerce. Secretary Weeks described the progress which the Eisenhower Administration had made since it took office in his address, "The Outlook Today."

The final day of conference opened on the theme "Purchasing Horizons —Tomorrow" presented by Stanley MacKenzie, director of purchases,

(Please turn to page 194)

7,000 ITEMS A KEY TO K&E LEADERSHIP

Drafting, Reproduction, Surveying.

Optical Tooling Equipment and Materials

Slide Rules Measuring Tapes

• Since 1867 engineers, scientists, designers, surveyors, draftsmen have relied on K&E as the foremost, most progressive, and most complete source of supply for the tools, equipment, and materials they work with. When you buy, think first of K&E, headquarters for 7,000 items. For example . . .

THE PARAGON® DRAFTING MACHINE

Thorough knowledge and thorough care of minutest detail were essential to the designing of the sturdy, accurate Paragon® Drafting Machine. Draftsmen prefer the Paragon, because it is time-saving and work-sparing, because it is reliable, easy to operate, and because they don't have to treat it with kid gloves. The Paragon Drafting Machine increases drafting room efficiency enormously, and effects substantial economies.

KEUFFEL & ESSER CO.

EST. 1867

New York · Hoboken, N. J.

Chicago • St. Louis • Detroit • San Francisco • Los Angeles • Montreal Distributors in Principal Cities



Manufacturers of Phillips head and other precision cold headed parts know a good thing when they see the production records!

In plants where Keystone "Special Processed" Wire is on the job, output per machine, per man, per hour has increased. Die life, for example, is often more than doubled — which in turn decreases machine down time and labor costs. A higher quality end product with its lower rejection rate helps place the per unit cost on a much more profitable level.

The superior grain flow characteristic of "Special Processed" Wire, together with its structural soundness, give this wire unsurpassed performance on any unusually difficult cold heading job. For further information, contact your Keystone representative or write direct.



For More Information Circle No. 223 on Inquiry Card-Page 17

U. S. Rubber Co. Mr. MacKenzie urged PA's "to develop a purchasing department capable of seeing, and working toward, its true destiny." "The Purchasing Department of the Future" was then outlined by J. S. Rutherford of the Aluminum Company of America. "How to Deal with Resistance to Change" was discussed by Dr. Mitchell Dreese, dean of the School for General Studies, George Washington University. "The Effect of Electronics on Purchasing" was taken up by Dr. Herbert F. Mitchell of Remington-Rand Inc. Delegates had earlier been prepared for Dr. Mitchell's talk with a showing of the Remington-Rand film, "Application of Electronics to Purchasing."

Last, but not least, of the speakers was George A. Renard, executive secretary-treasurer, NAPA. Mr. Renard's "From One P. A. to Another" included many interesting views on the current situation and their implication to purchasing men. Following his talk, General Conference Chairman L. E. McCorquodale officially closed the conference.

Canton Association Meets

The October meeting of the Canton and Eastern Ohio Association of Purchasing Agents was held at the Elks Club in Canton. The program featured Mr. C. F. Burke, assistant to the president, General Tire and Rubber Co. He spoke on a topic that is of nationwide interest, "Future Highway Demands." Despite tremendous post-war expenditures, our highway system is wearing out or becoming obsolete much faster than new roads are being constructed.

Old Dominion Association



Gathered round the table in a room in Washington's Mayflower Hotel are members of the Old Dominion Purchasing Agents Association. They held a regular meeting concurrent with the 8th District Conference. It was presided over by President John Friend of Federal Reserve Bank of Richmond.

For More Information Circle No. 224 on Inquiry Card—Page 17→

PURCHASING

HERE'S PROOF: You can always count on Continental for every fastener need!

Only Continental Specializes in Special Fasteners

...to meet your every need

Continental has specialized the handling of special fastener orders to better solve your problems. They now turn out well over 5,000 different blueprints each week. Specialized engineers have been assigned to each phase of this fastener production to better concentrate their work and to save you time and money.

Each Continental engineer has had experience producing ground thread taps and gages, with their exacting screw thread dimensions. This training with highest standards of precision is passed on to you in every Continental product. The superior accuracy and greater thread uniformity more than meet your specifications, at no additional cost.

Many times Continental cold forged fasteners have been substituted for expensive screw machine products, improving the product by increasing its strength, while reducing its cost.

Put these standards of precision to work for you on your special orders. It will pay you to call or write us today.

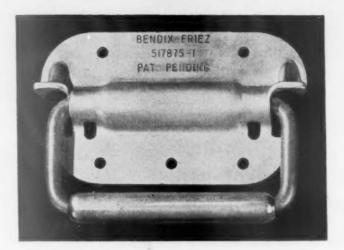
Manufacturers of **HOLTITE** Fastenings



50th Anniversary

CONTINENTAL SCREW COMPANY

New Bedford, Mass., U. S. A.



WONDERFUL NEW HANDLE

... if you sell or ship anything that has to be lifted, this is for you. It meets military requirements for many specialized equipment uses. Count its advantages in the specs below.

This patented Bendix-Friez handle is rust-proof . . rattle-proof and withstands shock and vibration.

It has a positive "snap-back" principle.

Built of stainless steel and aluminum, it can be riveted or welded to any kind of container or depressed in the sides.

What's a large instrument manufacturer doing making handles? We couldn't seem to find one for our own use that pleased us . . . so we made one ourselves.

Manufacturers who saw it and needed a better handle liked it. If you've got something that's got to be lifted by handles . . . chances are this Bendix-Friez handle is for you. Small or large quantity orders. Inquiries answered promptly.



FRIEZ INSTRUMENT DIVISION OF BENDIX AVIATION CORPORATION

1456 Taylor Avenue • Baltimore 4, Maryland
Export Sales, Bendix International Division, 205 E. 42nd St., New York 17, N.Y., U.S.A.

For More Information Circle No. 225 on Inquiry Card-Page 17

Second District Conference

(Continued from page 180)

typical purchasing office. Here some well known types of salesmen gathered, awaiting their turn to see the purchasing agent. In their conversation, the purchasing audience was given an amusing opportunity to "see ourselves as others see us". At the same time, the conversation traced the development of the purchasing profession, contrasted old ways with new, and clearly set forth the modern professional concept of the purchasing responsibility in the "changed climate" of business management.



William J. Mitchel, Jr., of Ford Motor Co., chats with Maynard Robertson of Briggs-Weaver Machinery Co., President of the Dallas Association.

Tom Collins of Kansas City, a nationally known humorist and inspirational philosopher, entertained at the banquet session with his talk, "Two and Two Are Not Always Four."

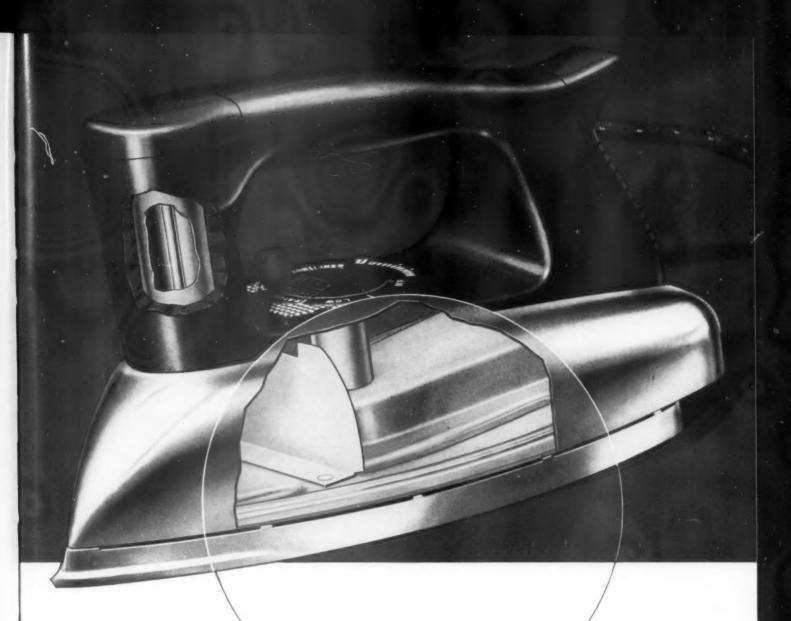
At the Thursday morning session, R. C. Swanton of New Haven, Conn., Chairman of the N.A.P.A. Business Survey Committee, analyzed the current state of business "What Does Our Business Survey Tell Us? A paper prepared by Harlan E. Cross of Birmingham, Acting Chairman of the N.A.P.A. Standardization Committee, was read by Walter Bell, Executive Director of the Texas State Purchasing Board at Austin. The concluding address at this session was on "How the Purchasing Agent Can Further the Public Relations of His Company" by William J. Mitchel, Jr., Manager of Special Services, Office of Public Relations, Ford Motor Co., Dearborn, Mich.

The concluding session was held on Thursday afternoon. Stuart F. Heinritz, Editor of Purchasing Magazine, New York, spoke on "The Changing Business of Buying", and George A. Renard, Executive Secretary of N.A.P.A., gave a dynamic commentary on national and eco-

(Please turn to page 200)

For More Information Circle No. 226 on Inquiry Card—Page 17→

PURCHASING



Peek under this gleaming chromium plate and see functional, durable, BRASS at work

In adding a combination steam-and-dry iron to its list of electrical appliances, The Dominion Electric Corp., Mansfield, Ohio, set its goals high. The iron had to be engineered, styled and priced so as to be readily salable in a highly competitive market.

■ Costs must be kept down – without sacrificing quality.

2 The iron *must* be light in weight (actually 31/4 lb.) and provide a long service life.

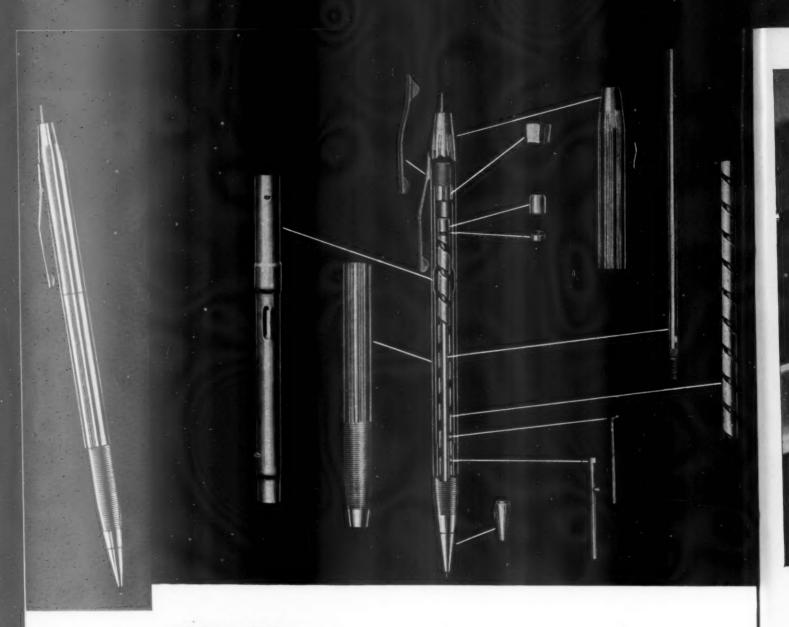
3 It must operate unfailingly – anywhere – on ordinary, undistilled tap water.

For the housing, steam generator, filler tube and miscellaneous supporting members, BRASS was the answer – as it so often is where freedom from rust, resistance to corrosion, workability and ease-of-finishing must be coupled with moderate cost.

We are glad to report that Dominion's choice and extensive use of Anaconda Brass paid off handsomely; also that we were able to give their engineering and production staffs an assist in selecting the right compositions and the most economical gages and tempers. Perhaps we can do the same for you? Simply write The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

ANACONDA

the name to remember in COPPER • BRASS • BRONZE



CROSS put an end to automatic pencil troubles with BRASS

Since 'way back in 1846, America's oldest manufacturer of fine writing instruments—the A. T. Cross Pencil Company, Providence, R. I.—found out that you can do things with brass that you can't do with any other metal. And they've been doing it ever since.

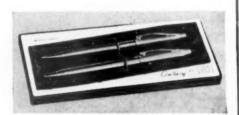
Illustrated above in actual size are an even dozen parts that make up the chromium plated Cross Pencil. All, except the spring clip of phosphor bronze, are made of brass supplied as sheet, strip, wire, rod or tube.

Note the multiplicity of fabricating operations—from the free cutting brass point to the strip-wound spiral—and you'll come to the conclusion that brass

gives you the most "easy workability" for your money.

And the man who owns a Cross Pencil—or Pen—is far less apt to fume or fuss. He's got a writing instrument that's tops in quality at a moderate price, with parts that resist wear and corrosion . . . that won't rust, gall or "freeze."

Dependable brass is plentiful—and unrestricted. The days of substitutes are over. Next time the man at the drawing board looks up and says "What'll it be," say "Make it brass." Better yet, say "Anaconda Brass." The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.



In the exploded view, above, is featured the pencil of the A. T. Cross Chromium Plated Pen and Pencil Set. All parts, including those in the pen, are made of Anaconda Alloys supplied by The American Brass Company since 1913. Cross also uses the same "inside working parts" in two "Century" Pen and Pencil Sets in which the caps, barrels and clips are available in either sterling silver or 1/20 12K gold-filled (illustrated above).

ANACONDA

the name to remember in

COPPER • BRASS • BRONZE



Keyed...to your cost problems

One key that solves production and cost problems...that improves plant efficiency...is a fresh viewpoint, a new idea.

There's where the specialized services of your Chain Belt Field Sales Engineer can help you. His broad application knowledge...his familiarity with your problems...and the efficient performance of Chain Belt Products can help you find the right key to your problems.

for example: If "flooding" or "starving" of your belt conveyors is your problem, Rex Apron Feeders can assure that one right "key" to more economical and efficient operation. They closely regulate the flow rates of the material-handling system, substantially reducing costs.

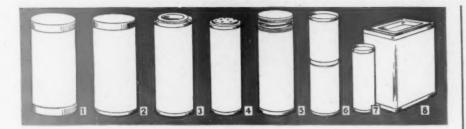
for example: If efficient bucket elevators are your needs, there is a size and type to exactly fit your operations. Rex Conveying Engineers will study your flow rates, materials handled, space requirements and recommend the elevator that will assure most economical operations. for example: If you're having "belt idler troubles," there's an answer in the complete Rex Idler Line. Impact idlers that cushion loading shocks, self-aligning idlers that lengthen belt life, troughing idlers that cut maintenance costs, are a few of the many that can help you.

Whatever your needs...drive chain, conveyor and elevator chain, complete elevators, belt conveyors, feeders, roller bearings and transmission, buckets or sprockets, you'll relieve those production pains by looking to Chain Belt. See your local Field Sales Engineer or write direct to Chain Belt Company, 4764 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT COMPANY

District Sales Offices and Distributors in all Principal Cities

For More Information Circle No. 227 on Inquiry Card-Page 17



CLEVELAND CONTAINERS EFFICIENT ECONOMICAL ATTRACTIVE A COMPLETE LINE!

- PLAIN ALL-FIBRE CAN... Bottom firmly glued on, and top assembled loosely.
- SLIP COVER CAN... Metal bottom seamed on, slip cover top of tin plate.
- FRICTION PLUG CAN . . .
 Metal top ring with tight fitting metal lid; metal bottom.
- TURN-SIFTER TOP CAN

 Friction plug type bottom
 and metal revolving perforated top.
- 5. SCREW TOP CAN ... Metal

- threaded ring with screw cap top; metal bottom.
- METAL END TELESCOPE CASE... Three or two-piece construction. Available also with paper caps or ends curled and disced.
- UNIT PACK CAN ... Metal bottom seamed on, metal top shipped separately for seaming on by packer. Civilian and military uses.
- 8. CONVOLUTE LABELED CAN . . . Available in round, square or oblong shapes.
- LINERS... Moisture and grease resistant and anti-corrosive liners can be provided for additional protection.
- LABELS... Strip labels, pre-printed wrappers, direct printing, or plain color wraps.

CLEVELAND TUBING

We manufacture tubing of every kind, type and size in chipboard, jute or kraft... in diameters up to 24"... in lengths and wall thicknesses as desired. Also all electric grades of tubing.

Write The Cleveland Container plant nearest you for a copy of our new PACKAGING folder.

WHY PAY MORE?

For the best . . . call CLEVELAND!



(Continued from page 196)

nomic issues under the familiar title, "From One P.A. to Another".

The ladies' entertainment program, in addition to the Round-Up party and banquet, included a luncheon and ice show at the Adolphus Hotel, and a motor tour of the city.

Charles F. Wilson of Hunsaker

Charles F. Wilson of Hunsaker Trucking Contractor, Inc., was general chairman of the conference, and J. D. Brown of General American Oil Company of Texas made the

program arrangements.

Other committee chairmen, all of whom contributed in outstanding measure to the success of the meeting, included: Fred D. Bradley of Southern Union Gas Co., Finance, Banquet and Reception; Robert E. Whitten of Gifford-Hill & Co., Registration and Reservations; Bart T. Holden of Southwestern Life Insurance Co., Printing; John R. Guynes of Magnolia Petroleum Co., Transportation; Robert C. Kelley of Dresser Industries, Reception; Mrs. Ruth Whitten, Ladies' Activities; J. Richard Brown of "The Southwestern Purchaser", Publicity; and Frank W. Wodrich of Texas Instruments, Inc., Attendance.

f f f Southern Conn. Ass'n

The Southern Connecticut Purchasing Association held its regular monthly meeting on Tuesday, November 9th, at the Stonehenge restaurant in Ridgefield, Conn.

Mr. Frederick A. Hayes, vice president for special products, Bigelow-Sanford Carpet Company, was the main speaker. He discussed "Purchasing Policies," pointing out the advantages to be derived from a published statement of company policies regarding procurement.

Mr. James A. Miller of Machlett Laboratories, Stamford, Conn., presided and Mr. Edwin W. Cunningham of Conde Nast Publications, Greenwich, Conn., chairman of the program committee introduced the speaker.

If your days are too busy to really digest the ideas contained in each issue of PURCHASING, have an additional subscription sent direct to your home. The same rate of \$4.00 per year applies.



What shape is a quality fastener?

Here is a handful of ELASTIC STOP® nuts. Each has ESNA's familiar red locking collar . . . is self-locking and vibration-proof. Each is a readily assembled, one-piece unit. Each provides positive protection against thread corrosion . . . prevents liquid seepage along bolts. Each is made from the finest of raw materials. Each is exactly controlled as to finished dimensions, class of thread fit and finish. Each is now in use on critical applications, with a record

Most of them are standard parts. Some originated as the result of a specific request for ESNA's help with an important fastening

Isn't it logical to call on us with your next fastening problem?

ASTIC STOP NUT CORPORATION OF AMERICA



Dept. N62-1215, Elastic Stop Nut Corporation of America 2330 Yauxhall Road, Union, New Jersey

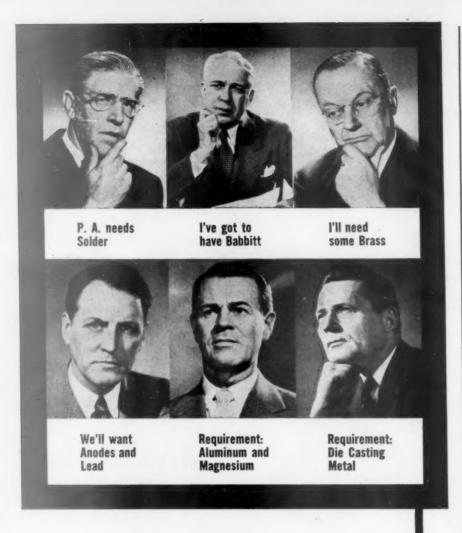
Please send the following free fastening information:

☐ ELASTIC STOP nut bulletin ☐ Here is a drawing of our product.

What self-locking fastener would

you suggest?

Title



Are you one of these?

If you are, your source is Federated Metals . . . for one or for all non-ferrous metals.

Federated, a division of American Smelting and Refining Company, is a nationwide organization with 14 plants and 24 sales offices for better service and faster delivery.

See Federated First for all Non-Ferrous Metals.

Federated Metals Division

AMERICAN SMELTING AND REFINING COMPANY 120 BROADWAY, NEW YORK 5, N.Y.

In Canada: Federated Metals Canada, Ltd., Toronto and Montreal

Aluminum, Magnesium, Babbitts, Brass, Bronze, Anodes, Zinc Dust, Die Casting Metals, Lead and Lead Products, Solders, Type Metals

For More Information Circle No. 230 on Inquiry Card-Page 17

L. A. Assn'n Holds Seminar

"Expediting in the Buyers' Market" was the subject of a seminar held by the Educational Committee of the Purchasing Agents Association of Los Angeles. It was held October 21 in Founders Hall at the University of Southern California. Panel members included: Jack Beamish (chairman), Hughes Aircraft Co.; Lt. Commander A. J. Russell, Navy Purchasing Office; E. R. Davis, Sierra Drawn Steel Corp.; Owen Gaudern, Flour Corp.; and Paul Gooder, Union Oil Co.

The regular October meeting of the Los Angeles group featured an address by J. V. Naish, executive vice president, Convair Division, General Dynamics Corp. Mr. Naish's subject was "An Ex-Purchasing Agent Looks at the Post War Purchasing Picture." This subject was very appropriate since Mr. Naish worked himself up in general management after having held positions as purchasing agent, manager of subcontracts, and director of materiel for the Northrop Aircraft Co.

Dallas Has 9 Point Program

It was Education Night for members of the Purchasing Agents Association of Dallas. Under the direction of Dan H. Barr who heads the Educational Committee, the evening was dedicated to the first objective of the Association—"to foster and promote intercourse and cooperation among its members." Based on the "Ignorance is a Voluntary Misfortune" theme, discussions were conducted on the following:

1. George Eason—How do you handle expediting and how can it be reduced?

2. Ray Langford—How do you handle the matter of employee purchases?

3. Mack Wade—Do you ever pay different prices for the same item at the same time to different suppliers?

4. John Morris—How do you handle the problem of reciprocity?

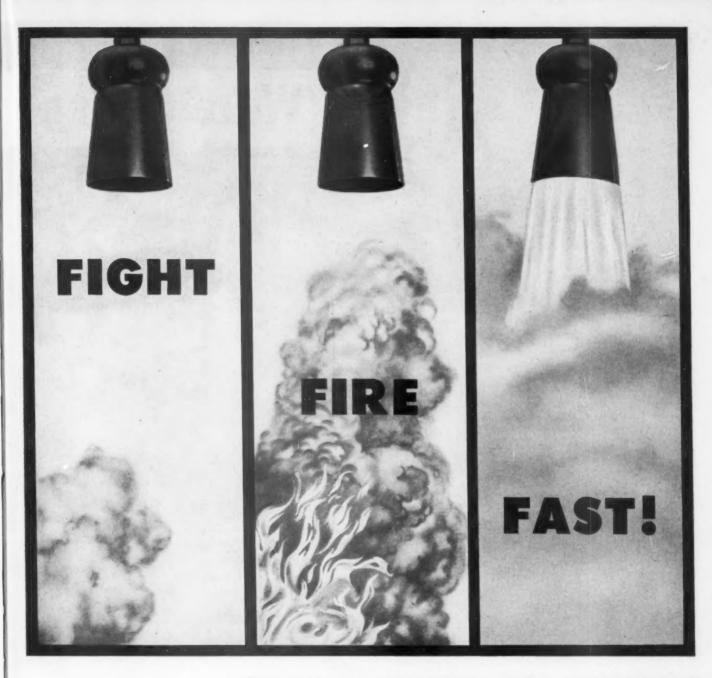
5. Jack Castles — What do you consider ethical or unethical in an attempt to get the best price?

6. Lee Darley—Do you have restricted days or hours for inter-

7. Travis Tucker — What procedure, if any, do you have for establishing source of supply?

8. R. E. Dickson—How do you control purchasing commitments?

9. D. P. Miller—Do you have any sole source of supply? Why?



WITH A KIDDE CO, SYSTEM!

Let fire get a foothold, and a going concern is gone. Don't risk it. Install a Kidde Automatic CO₂ Fire Extinguishing System, and fire won't stand a chance.

A Kidde System goes into action at the first sign of fire—releases clouds of CO₂ over the blaze, smothers fire almost as soon as it starts. And CO₂ leaves no mess to clean up later. It puts out the fire, then vanishes.

Protect flammable tiquids, dip tanks, spray booths with a Kidde System.

Let Kidde guard record vaults, machinery and electrical equipment.

And for on-the-spot protection, get Kidde portables. When fire strikes, just aim the horn, pull the trigger, and swoosh! No more fire.

Don't wait 'til your business is a cinder pile-Contact Kidde today.



The words 'Kidde', 'Lux', 'Lux-O-Matic'
'Fyre-Freez' and the Kidde seal are trademarks of
Walter Kidde & Company, Inc.

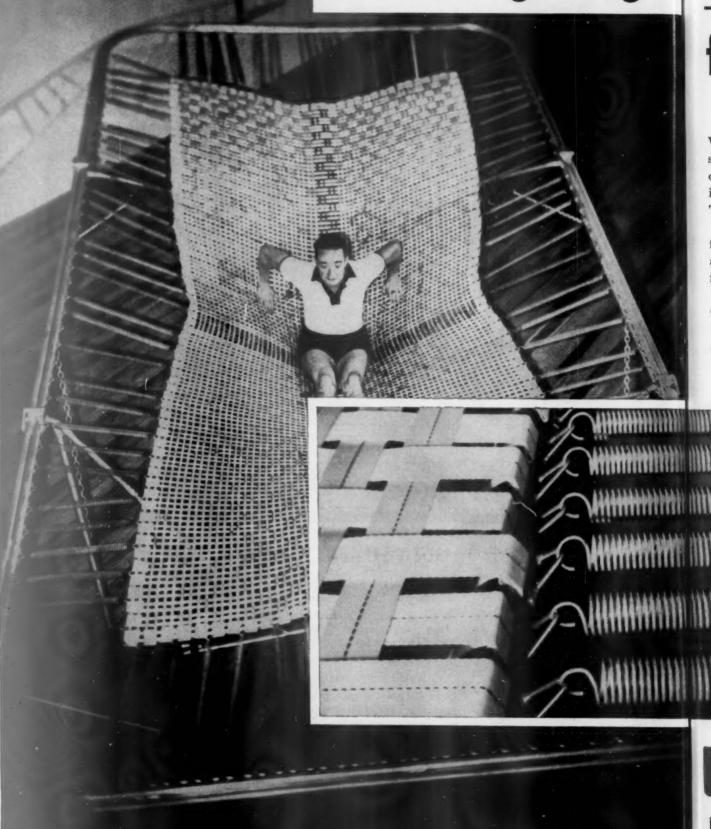
Walter Kidde & Company, Inc.

1247 Main Street, Belleville 9, New Jersey

Walter Kidde & Company of Canada, Ltd., Montreal—Toronto

For More Information Circle No. 231 on Inquiry Card-Page 17

"We're getting



twice the life

from American

says NISSEN TRAMPOLINE CO.

When George Nissen was a student in high school, he was fascinated with the antics of circus clowns on the safety nets. Using old inner tubes and a rope net, he built his first Trampoline.

As the National Intercollegiate Tumbling Champion from 1935 to 1937, Mr. Nissen built the Trampoline into a breathtaking national sport—it was accepted in 1948 for competition by the National AAU.

Each Nissen Trampoline contains 120 American Quality Springs, 8" long, 11/8" in diameter. The mat has to "give" three feet, and there is only 31/2 inches clearance when the mat is bottomed. For this reason, the

Quality Springs"

Cedar Rapids, Iowa

springs must have exactly the right deflection.

Concerning safety, Mr. Nissen says this: "We used to have spring breakage before using American Quality Springs. It was dangerous because the spring could rebound and seri-

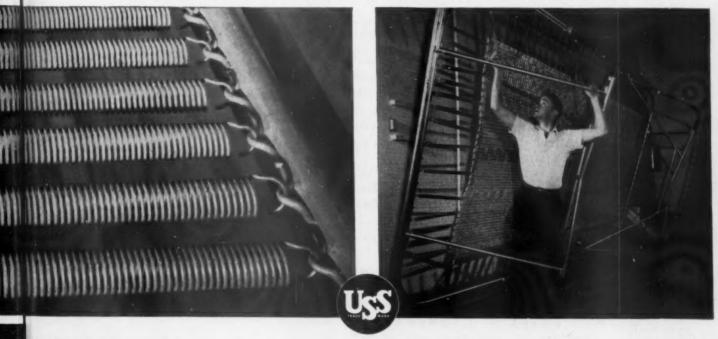
ously injure someone standing nearby. Since we switched to American Quality Springs, we've never had a customer complaint, and the springs last twice as long as before."

If springs are an important part of your product, American Steel & Wire may be able to design a *better* one for you. We'll give you any quantity, any size, any kind of steel or finish—at the lowest price you ever thought possible.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: CLEVELAND, OHIO

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS

TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS - UNITED STATES STEEL EXPORT COMPANY, NEW YORK



USS American Quality Springs

UNITED STATES STEEL



A REVOLUTIONARY, NEW, HIGH SPEED STEEL CUT-OFF TOOL DESIGNED SPECIFICALLY FOR CUTTING STAINLESS, DIE STEELS AND OTHER TOUGH FERROUS ALLOYS FASTER, MORE ECONOMICALLY.

- CUTS TWICE AS FAST . . . as conventional carbon steel band saw blades when sawing tough alloys.
- CUTS UP TO 30 TIMES LONGER . . .
 as proved by actual, on-the-job tests in the field.

Now a band saw machine can be used for cutting steels that heretofore could be cut only with a power hack saw blade. The MILFORD REZISTOR Band Tool cuts smoother, faster and more accurately — chip loss of expensive metal is reduced. Descriptive circular and price lists available. Contact us direct or through your local MILFORD distributor.

MILFORD specialists will talk over your metal-cutting problems with you, advise if the REZISTOR Band Saw Tool is right for your specific application, and determine your possible cost reduction.

STANDARD OF QUALITY THE WORLD OVER

THE HENRY G. THOMPSON & SON CO.

MILFORD

NEW HAVEN 5, CONNECTICUT

PROFILE BLADES AND BAND SAW BLADES HAND AND POWER HACK SAW BLADES

Buy MILFORD Blades through your local MILFORD Distributor, a man chosen for his ability and earnest desire to SERVE YOU BEST for ALL YOUR INDUSTRIAL NEEDS.

For More Information Circle No. 233 on Inquiry Card-Page 17

Metropolitan Purchasers Have Double Feature Program

Theme of the October meeting of the Metropolitan Purchasers' Assistants Club was "Institutional Purchasing." There were two guest speakers to present their ideas on this subject. First was Henry K. Nelson, purchasing agent for Columbia University. He was followed by Fergus McKeever, eastern manager of "Institutions" magazine.

On November 17, members were

On November 17, members were able to add to purchasing knowledge with a visit to Graybar Electric. The trip started with a buffet luncheon and a short talk describing what would be seen "behind the scenes" of this major distributor.

Three honorary life memberships were recently awarded by the club. Honored were Jeff Leonard, secretary of the Purchasing Agents Association of New York, and Stu Heinritz and Paul Farrell, both of Purchasing.

Northern Calif. Federal Buyers

The October meeting of the Federal Procurement Officers Association of Northern California featured a program of exceptional interest. Following luncheon and announcements, the group heard a talk by Major Harold Bare, USAF as part of the "Know Your Federal Agency" series. Major Bare, who is deputy regional officer of the Army and Air Force Exchange Service, spoke on "The Army and Air Force Exchange Service." A talk on "What America Means to Me" by George M. Mardikian. Mr. Mardikian is a famous restauranteur (Omar Khayyam's) and is also well known for his philanthropies and as a civic leader.

L. A. Luncheon Meeting

The Los Angeles Purchasing Agents Association had its first noon luncheon meeting of the 1954-55 season at the Los Angeles Elks Club on Thursday, October 28, 1954.

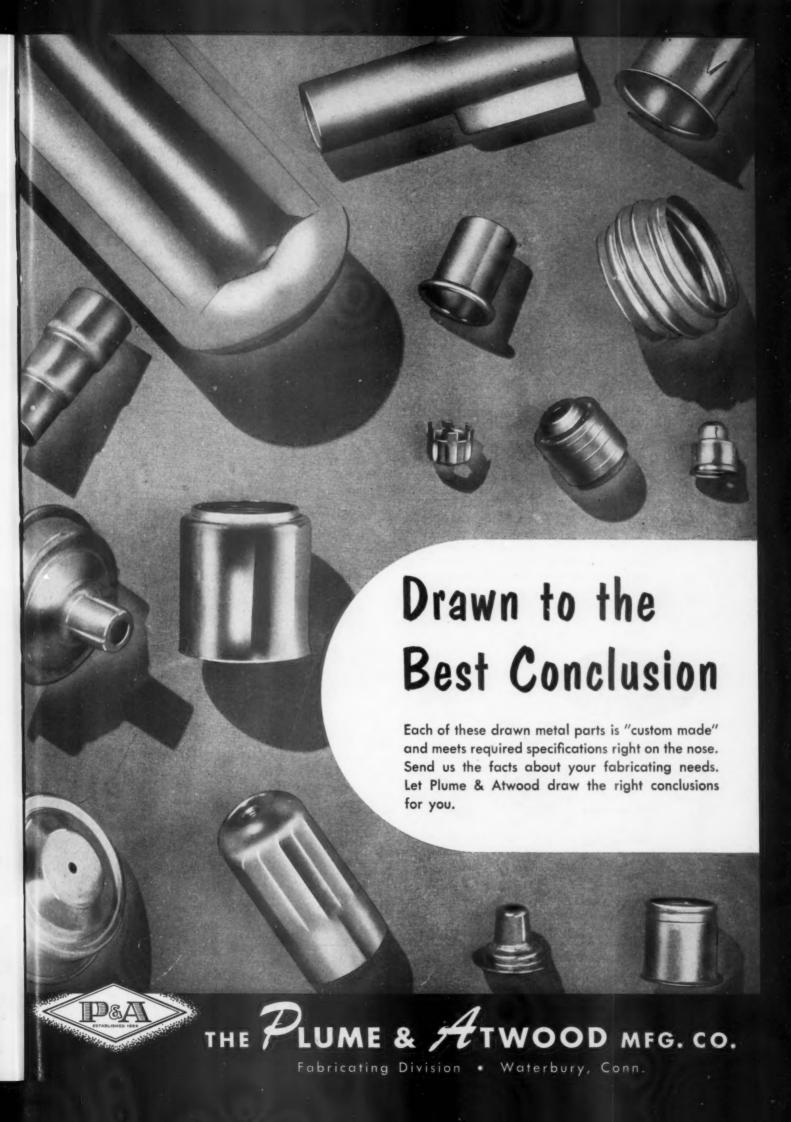
Gil Mirus, Purchasing Agent of the Wilco Company, the noon luncheon chairman, presented as the guest speaker of the day, William Maloney of the Bank of America, public relations department.

public relations department.

Mr. Maloney's subject was "A
Look at California". The main points
of discussion in his talk were "Population Growth", "Current Markets
and Buying Power", "Natural Resources", and "Diversification of
Economy".

For More Information Circle No. 234 on Inquiry Card—Page 17→

PURCHASING





A second's glance will tell you there's a difference in purpose as well as shape between the plug and fly above. Companies differ in the same way and it won't take long to find that Titeflex is a "different" kind of company. Take originality -years of work on specially engineered jobs have made Titeflex people original in their thinking so you won't get routine answers to your \$64 questions. More important, they know their business and you'll find you can talk over your troubles with them. And above all, Titeflex people are friendly, anxious to help. If you want to be treated individually, differently, you may like

Titeflex a lot. Many others do. The coupon below will bring us together.



For More Information Circle No. 235 on Inquiry Card-Page 17

Milwaukee Ass'n Hears Sales Executive

ir

S

"Where there is no vision, people perish" was the title of the speech delivered by James E. Dornoff, vice president of sales, Pate Oil Company. Milwaukee, to the Milwaukee Association of Purchasing Agents at the Elks Club, Tuesday, October 12.

Mr. Dornoff urged all of us to follow the pattern of the Bible in our everyday living; to do practical dreaming and to eliminate the economic hypochondriac's view point in our planning for the future.

He suggested that the most important help Purchasing People can give sales people is to talk optimistic. He gave four points to help us.

1. Discount all pessimistic news.

2. Formulate the habit of positive thinking and cleanse the mind of negative thought.

3. Get all of the ill will out of your mind for your superiors, fellow man, and competitor.

4. Reaffirm your faith in yourself, your community, company, and product.

Mr. Jim Moriarty of Sivyer Steel and his Commodity group also had excellent program: Subject, "Shell Moldings". He had able assistance from the panel and Mr. Jack Hinds of the Chemical Division of General Electric, who presented a sound slide film on the subject and participated in the freefor-all discussion.

Meteorologist Speaker at New Orleans Meet

Speaker for the October meeting of the Purchasing Agents Association of New Orleans was Nash Roberts. A meteorologist, he told the PA's about the importance of weather predictions particularly to construction engineers. His talk was very interesting, light, and humorous. Mr. Robert Elsasser, local economist and a regular speaker at all of the business meetings, spoke on the economic situation today and what we might expect in the near future.

On Tuesday, October 26, Albert Claverie, chairman of the plant visitation committee, took 47 of the members to the Kaiser Aluminum and Chemical Company at Chalmette. The visit began with a fine luncheon at a downtown hotel as guests of Kaiser, followed by an indoctrination film on the aluminum industry. The film was extraordinary in its presentation of a story that might have been very technical, but

Loft: Fresh water plug for Pickerel and Bass,

which was very simply and interestingly told. It is a film that all as-

sociations would enjoy.

Once at the Kaiser plant, the visit included seeing the "pots" which smelt 1000 pounds of molten aluminum each day. There are 72 of these "pots" at the Chalmette plant. This plant, completed in 1953, produced 400,000,000 pounds of aluminum-more than the entire country produced prior to World War II.

The entertainment committee arranged a Thanksgiving Eve Supper Dance at the Metairie Country Club on Wednesday, November 24. This repeated an event which last year was the finest entertainment ever enjoyed by purchasing agents and their purcherettes.

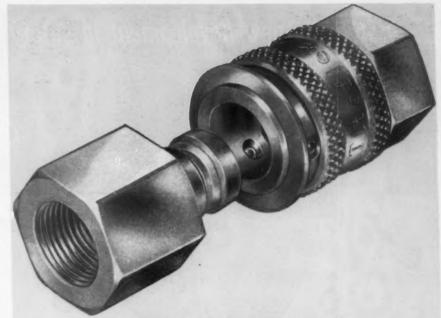
Los Angeles Buyers Meet With Electric Club



Three presidents at the joint luncheon meeting of the Los Angeles Electric Club and the Los Angeles Purchasing Agents Associa-tion held on November 1. They are, left to right: David L. Wilt, president of the Los Angeles Purchasing Agents Association; R. E. Johnson, president of the Los Angeles Electric Club; and Charles Detay, president of the Los Angeles Chamber of Commerce.

Charles Detoy, president of the Los Angeles Chamber of Commerce addressed a joint luncheon meeting of the Los Angeles Electric Club and the Los Angeles Purchasing Agents' Association at the Biltmore Hotel on Monday, November 1, 1954. "The Electric Atmosphere of Southern California" was the topic of Mr. Detoy.

The board of directors of the Los Angeles Purchasing Agents' Association honored at the head table were: David L. Wilt, president, U.C.L.A.; John R. Hairgrove, first vice-president, Braun Corporation; E. Benton Long, second vice-president, United States Lime Products; S. H. Bellue, secretary, Hughes Aircraft Company; Frank T. Henry, senior director, Arden Farms Company; William E. Hayes, junior director, Consolidated Engineering Corp.; William T. Reynolds, national director, Los Angeles Transit Lines; W. B. Stanford, chairman, public relations committee, District #1, Phelps Dodge Copper Products.



end your quick coupling problems the QUICK-SEAL way

If you haven't seen the new Titeflex OUICK-SEAL Straight-through and Check-valve Couplings - you have a pleasant surprise coming. These new Couplings . . .

- 1. Are leakproof. The higher the pressure, the tighter
- 2. Coupleand uncouple in ONE SECOND without tools.
- 3. Prevent hose kinking—through their 360° swivel action.
- 4. Are slim, easy to handle, not awkward and bulky.
- 5. Have no projections to snag or bend.
- 6. Have heat-treated steel bearing surfaces and stainless steel ball bearings and springs for long life.
- 7. Are made in a variety of alloys and in many sizes up to 12" diameter. Are interchangeable in the same size.

Titeflex QUICK-SEAL Couplings are made in the following types - Straight-through, Single- and Double-Checkvalves. The Straight-through type has a smooth bore for free flow without obstructions. Write today for Titeflex QUICK-SEAL Coupling Catalog.



Titeflex, Inc. Industrial Products Division 513 Hendee Street Springfield, Mass.



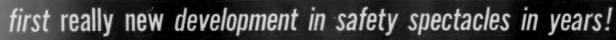
OUICK-SEAL COUPLINGS

I'm interested in the possibilities for your new Quick-Seal Hose Coupling. Send me complete catalog-no obligation of course.

Address _Zone___State_

The HIGHER the Pressure the TIGHTER the Seal

For More Information Circle No. 236 on Inquiry Card-Page 17





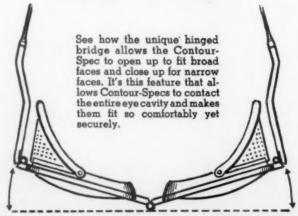
(Lew)... hinged bridge gives snug, comfortable fit . . . self-adjusting to *any* facial contour!

- New hinged bridge combines the flexibility of cuptype goggles with the lightweight, compact protection of safety spectacles.
- One all-purpose size permits universal fit. Bridge hinge gives automatic adjustment to any bridge width from 18-26 mm.; one eye size—47 mm.—fits everybody. No need to stock a variety of bridge and eye sizes.
- Plastic nose-and-cheek pads provide full closure around eye cavity.
- 4 Contour-shaped adjustable plastic-and-cable temples hold spectacles firmly in place.
- Matching sideshields are perforated plastic, providing protection at sides—fold back for pocket compactness.

Order a supply of Contour-Specs from your Willson distributor. Let your workers try their amazingly greater comfort, and see how they're preferred over ordinary safety spectacles!

6 Butyrate frame—toughest plastic used for spectacles. Standard frame is flesh colored, fitted with 6-curve Willson Super-Tough® glass lenses. Available also with green frame and side-shields, fitted with Willsonite® Super-Tough green glass lenses.

Hinged to fit any face snugly!



*Trademark

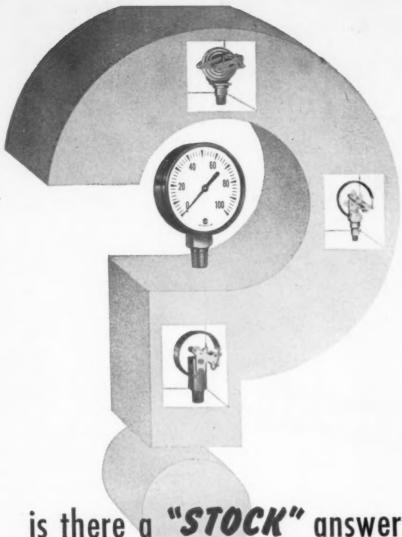
More Than 300 Safety Products



Established 1870

WILLSON PRODUCTS, INC., 221 WASHINGTON ST., READING, PA.

For More Information Circle No. 237 on Inquiry Card-Page 17



is there a "STOCK" answer to your "SPECIAL" gauge problems?

There may very well be, because USG manufactures and stocks more than 200,000 standard gauges and a complete line of gauge components to meet practically every pressure sensing and indicating requirement.

Chances are that, with slight modification, a stock gauge will fulfill your very needs . . . eliminating the expense of special gauge design, engineering and production. USG's special background, experience and resources are ready to assist you with all problems relating to gauges or other pressure actuated devices.

A call to your nearest USG District Office, or, a letter to us at Sellersville is all that you need to determine whether we can supply a "standard" from stock . . . or, whether your application requires a "special"

UNITED STATES GAUGE

Gauge Headquarters
for over 50 years

United States Gauge, Division of American Machine and Metals, Inc., Sellersville, Penna.

For More Information Circle No. 238 on Inquiry Card-Page 17

USG'S RESOURCES HELP DESIGN ENGINEERS MATCH SPECIFICATIONS

Performance and price are two factors every design engineer must consider carefully when specifying gauges.

Most engineers know of USG's record of leadership in gauge design and precision engineering—for over 50 years USG has been designing and producing gauges for more Original Equipment Manufacturers than any other instrument company in the world.

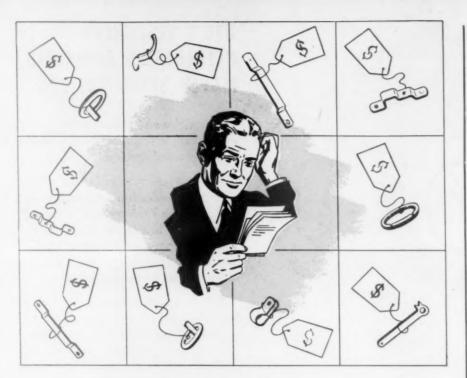
Many engineers don't know, however, that USG maintains the world's largest stock of gauge components to meet practically any pressure sensing device or pressure actuator application. These components are stocked by USG specifically to eliminate expensive special production.

In addition to the components for special gauge designs, USG inventories over 200,000 standard gauges in a variety of types, sizes and ranges for practically every industry application. Many stock gauges carried by USG are expensive special production items with other gauge manufacturers.

USG provides highest quality gauges at competitive prices because its facilities are economically integrated for large volume, quality controlled production. Gauge for gauge—in every application and classification—in every price class—USG has more to offer than any other make!



Above, a portion of USG's Research Laboratory. Here constant testing of materials under customer operating conditions assures optimum efficiency and long gauge life.





Try us as a secondary or alternate source. You may be surprised at what our advanced methods can save you.

Costs, methods and techniques change rapidly in the stamping business, as in all business.

Through the constant development of new equipment, by producing our own multiple-use tooling, by perfecting unique time-saving procedures we're effecting great economies. Often, in fact, we can save our customers the cost of dies.

Frequently, of late, happy new customers have said to us, "We wish we'd known of your low prices before." Maybe this will be the case with you. Give us a try.

FOR FULL INFORMATION, send for our free, 12-page booklet "Service in Stampings." Or send us a blue print for a quote. These are the days when savings count!



STAMPINGS DIVISION

"ONE PIECE OR A MILLION"

2412 Union Street, Glenbrook, Conn.

For More Information Circle No. 239 on Inquiry Card-Page 17

Dayton PA's Hear How to Gut Paperwork

Featured speaker at the November meeting of the Purchasing Agents Association of Dayton was Mr. Ralph R. "Tex" Tekulve, former consultant for the Standard Register Co. of Dayton. Mr. Tekulve spoke on the topic on which he is a recognized expert, "Paperwork Can be Reduced and Simplified in the Purchasing Function." Prior to the dinner meeting, there were forums dealing with "Methods of Expediting" and "How to Handle Inventory Reduction with Suppliers."

December 2 was Ladies Night. Fred G. Hardenbrook, branch manager for Dictaphone's Dayton office, presented color slides of his travels throughout the world.

Montreal PA's Meet

The October meeting of the Purchasing Agents Association of Montreal started off with a panel discussion on "The Purchasing Function in Company Organization." The panel team consisting of Lorne Argue, Merrill Archibald, Cy Butler, Orval Fares, and Ernie Labrie did a top job on this one. Many interesting points were brought out in the discussion which was divided into four phases:

a) What is the relative position of a purchasing agent to management?

b) How could purchasing present its arguments directly to management?

c) What problems does a purchasing department have with other departments?

d) How would you proceed with the introduction of new materials, ideas, or methods?

Featured speaker at the dinner meeting was Mr. Harry Gould, general manager of the Montreal Board of Trade. Mr. Gould's topic was "Your Montreal Board of Trade Today."

Denver Association

Highlight of the October meeting of the Purchasing Agents Association of Denver was a visit to the Pacific Intermountain Express depot. Following the plant visit a dinner meeting was held at the Brown Palace Hotel.

The November meeting was Executives Night and PA's brought their bosses. Featured speaker was Professor Delton Flanders of Colorado School of Mines.



Not when you use KIMPAK 301!

New KIMPAK 301 is the practical solution to surface damage to furniture finishes during shipment. KIMPAK 301's ability to shield the fine finish against scratching makes it the ideal protective agent in a furniture package. KIMPAK 301 costs no more than ordinary materials. It is specially designed to protect against the major causes of scratching:

1. Abrasiveness of the inner spacers. Kimpak 301 provides a scratch-free, non-disintegrating, compressible barrier between inner spacers and the furniture finish. Its conformability ensures a snug package.

2. Dust, dirt, cinders that sift into the container. The combination of

high creping and porous structure—exclusive with KIMPAK 301—provides a trap for dirt, grit or cinders, which may lodge between the packaging material and the polished surface.

3. Abrasive action of harsh packaging materials. Kimpak 301 is soft and non-abrasive . . . free from wood splinters, dirt and other abrasive materials. No lumps, hard glue spots or stiff wrinkles.

Scratching is but *one* of many problems encountered in furniture packaging. These problems are *solved* when new KIMPAK 301 is specified. For more details, contact your local KIMPAK distributor, or mail coupon below.

SPECIFY KIMPAK 301 TO SOLVE THESE INTERIOR PACKAGING PROBLEMS:

Scratching
Pressure-marking
Staining
Chafing
Conformability
Ease of handling
Disintegration

Whatever your protective interior packaging requirements, there is a Kimpak specification that does the job...better!

KIMPAK 63

		iscons					
prov	ide bet	ter pro	to learn tection a dete info	it lowe	r cost f		
Nam	ıe	*******	********		*******		
Firm	ı		**********	******	*******	*********	
Stree	et Add	ress	***********				************

et.

nt as



Clean, bright, accurate, strong — that's the story of Ritco Drop Forgings. We produce parts to your blueprint in steel or non-ferrous metals, in weights from ½ lb. to 15 lbs.

Come to Ritco for Drop Forgings, special fasteners, and finished

bolts with regular or heavy heads. Also, take advantage of our complete facilities for finishing — machining and grinding. Send blueprints and specifications for free estimates.



RHODE ISLAND TOOL COMPANY 148 West River Street Providence 1, Rhode Island

RITCO

FOR 120 YEARS



Exclusive New England Representatives for Cleveland Cap Screw Co.

For More Information Circle No. 240 on Inquiry Card-Page 17

Rochester Ass'n Tours Kodak Park

In place of the regular monthly meeting, members of the Purchasing Agents Association of Rochester recently were guests of the Eastman Kodak Co. at Kodak Park. First stop on the visitation was Kodak Park purchasing. Then members toured the rollfilm department and saw how photographic film was made. Particularly interesting were the elaborate quality control techniques necessary to maintain standards. The group then had dinner and were able to question Kodak executives about what they had seen in the plant.

Reciprocity Discussed at Washington Meeting

"What's Wrong With Reciprocity" was the subject of a thought provoking panel discussion recently held by the Purchasing Agents Association of Washington. Handling this controversial—and for many PA's frequently irksome—topic were Gordon Ainslie and Stan Bryan with Carl Weber as moderator.

On October 14, the program was devoted to education on fire prevention. First, the group was shown the film "Approved by Underwriters" which showed tests products have to pass to get approval from Underwriters Laboratories. R. J. Larrabee of Underwriters Laboratories was on hand to answer questions about the film and explain more about how products get the Underwriters approval. Late releases from the National Association were presented by Harry S. Beetham, chairman of the educational committee.

New England Association

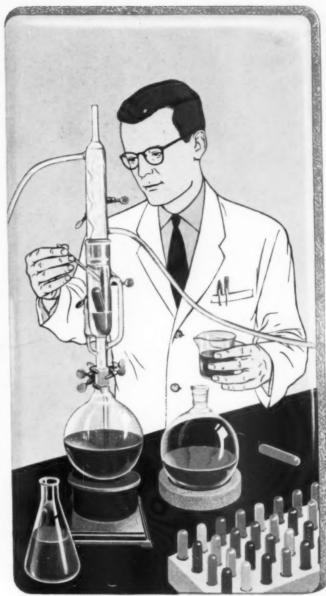
Featured speaker at the November meeting of the New England Purchasing Agents Association was Stuart F. Heinritz, editor of Purchasing. Mr. Heinritz discussed "The Changing Business of Buying." Prior to the dinner meeting at Boston's Hotel Vendome, there was an afternoon conference dealing with "Scrap and Surplus Disposal." Donald I. Holbrook and Warren L. Price moderated.

Next event on the New England calendar is the Christmas Meeting and Entertainment. This year it will be held at the Hotel Bradford in Boston. Attendance will be restricted to members and two personal guests.

For More Information Circle No. 241 on Inquiry Card—Page 17→

PURCHASING





Something new for Emperor Chou

Lacquer, the protective coating that beautifies thousands of modern products, came of age in China's ancient Chou dynasty—as a handsome, durable finish on anything from bowls to bows and arrows.

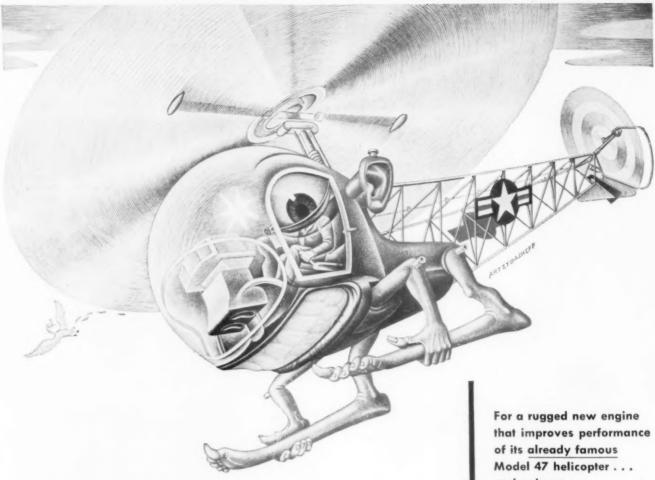
While still retaining lacquer's basic advantages—durability, beauty, easy application—chemists have improved its quality with a powerful solvent, methyl isobutyl ketone. A few coats of modern lacquer make a better looking, longer lasting finish than the ancient

Chinese achieved with hundreds of coats. MIBK's ability to dissolve nitrocellulose solids is largely responsible for the deep, luxurious luster of today's lacquer.

Shell Chemical pioneered the use of MIBK and other ketones in lacquer making. Other industries also benefit from MIBK's high solvent power—leather, petroleum, pharmaceutical and textile manufacture among them.

Shell Chemical Corporation

Chemical Partner of Industry and Agriculture



New "vitals" for this Korean air vet

This battle-proven hero of 18,000 front-line rescues over Korea is now outperforming itself-newly powered by Lycoming's 250-h.p. O-435 engine.

With this superior power plant, both the Model 47 and its sister ship-the 4-Place Utility 47G-1will fly faster and higher in all weather . . . and require far less maintenance.

Such performance improvement is but one of many Lycoming contributions to air-cooled power.

Can you use superior air-cooled power . . . or any other of the diversified services listed at the right of our signature? Whatever your problem . . . look to Lycoming!

and reduces maintenance as well . . . **BELL looks to Lycoming.**





Send for Free Booklet! "THE LYCOMING STORY"... 40 interesting, illustrated pages showing many ways Lycoming is ready to help you. Write for it on your letterhead.

Aircraft Engines Industrial and Tank Engines Engine Overhaul Generating Units

Turbine Engineering and Research Engineering Design and Development Hardened and Ground Precision Parts Gears and Machine Parts

Complete Assemblies Heat-Treating and Plating Steel Fabrication Castings Boilers



FOR RESEARCH . FOR PRECISION PRODUCTION



DIVISION OF STRATFORD, CONN.
Manufacturing plants in Stratford, Conn., and Williamsport, Pa.

For More Information Circle No. 242 on Inquiry Card-Page 17

W

be

tul

siz

tre

CO

Th ma Ba

sta

ex

M ha

of

D



Which is THE Tube for You? Take sizes alone, for example—

With literally thousands of sizes available, Mr. Tubes would indeed be hard-pressed to show them all. And of course, selecting the right tubing for your specific requirements involves so much more than size alone. Grades, methods of manufacture, surface finishes, heat treatment, lengths, shapes and special ends all must be carefully considered.

The complete range of tubing available is just one reason why so many tubing users are satisfied customers of B&W. Add to this B&W's reputation for quality tubing plus a policy of service that starts with your B&W tubing distributor or B&W district office and extends all the way up to the B&W headquarters technical staff.

Mr. Tubes, symbol of B&W customer contact, is a helpful man to have around. Call him in the next time you have a tubing problem of any kind.



THE BABCOCK & WILCOX COMPANY TUBULAR PRODUCTS DIVISION

eaver Falls, Pa.— Seamless Tubing; Weided Stainless Steel Tubing Alliance, Ohio—Welded Carbon Steel Tubing

For More Information Circle No. 243 on Inquiry Card-Page 17

Threaded Specialties





BETTER BOLTS SINCE 1882

MANUFACTURING COMPANY 327 Pine St. Pawtucket, R. I. THE PLACE TO SOLVE YOUR BOLT PROBLEMS "The Bolt Man"

For More Information Circle No. 244 on Inquiry Card—Page 17

New York PA'S Hear Ass't Postmaster General

Procurement problems for the largest business in the world, the post office, were discussed at a recent meeting of the Purchasing Agents Association of New York. Speaker at the dinner meeting was the Honorable Ormonde A. Kieb, Assistant Postmaster General. Subject of his address was "Post Office Supply Problems—A Fresh Look."

Mr. Kieb first gave his audience an indication of the scope of the job he and the other members of the Eisenhower team faced in running this tremendous business. The Post office uses some 100,000,000 sq. ft. of floor space, employs 500,000 people, and was losing about \$700,-000,000 annually. He then described some of the steps that had been taken to increase efficiency and cut losses. These measures include decentralization of operations, greater cooperation with GSA on purchases of many materials, and detailed analysis of individual operations.

At the forum preceding the dinner meeting, the topic was "What Is The Correct Discount for MRO Supply Items?" Guest speaker was Mr. Milton M. Goldsmith, vice president of Glauber Inc., a leading New York jobber. Mr. Goldsmith advised buyers first to make certain they are dealing with firms who are equipped to supply their needs and whose standards insure a reliable product. If a buyer sticks to such firms, he can quite freely get the best price the market permits without endangering quality or delivery.

New members of the New York group include: Robert J. Corbey, Servomechanisms Inc.; Stanley L. Olliver, Chemical Construction Corp.; Paul R. Stokes, E. R. Squibb & Sons; and Walter E. Willets, Conover Mast Publications, Inc.

Wilmington Ass'n Meets

Featured speaker at a recent meeting of the Wilmington Purchasing Agents Association was John L. Gillis, vice president of Monsanto Chemical Co. Mr. Gillis, who is in charge of Monstanto's marketing, spoke on "Management Looks at Purchasing." He discussed the new field of purchasing research in which qualified analysts help suppliers evaluate costs, and find improved processes to reduce them. Because of its importance and the widespread interest in Mr. Gillis's topic. PA's were invited to bring other members of managment of their companies along with them.

KANSAS
Industrial Metals, Inc., Wichita
KENTUCKY
Southern States Iron Roofing Co., Louisville
LOUISIANA
Southern States Iron Roofing Co., New Orleans

LOUISIANA Southern States Iron Roofing Co., New Orlea MARYLAND Clendenin Bros., Inc., *Baltimore Lyon, Conklin & Co., Inc., *Baltimore

MASSACHUSETTS
Arthur C. Harvey Company, *Boston
MICHIGAN

MICHIGAN
Kasle Steel Corporation, *Detroit and Grand Rapids
McDonnell Bros., Inc., (Architectural only) *Detroit
Meier Brass & Copper Co., *Detroit
MINNECOTA

Meler Brass & Copper Co., *Minneapolis
Vincent Brass & Copper Co., *Minneapolis

Vincent Brass & Copper Co., *Minneapolis

MISSOURI
Industrial Metals, Inc., *Kansas City and St. Louis
United States Steel Supply Div., St. Louis
NEW JERSEY

NEW JERSEY
Edgcomb Steel Corporation, Hillside
Peter A. Frasse & Co., Lyndhurst
Mapes & Sprowl Steel Co., *Union
NEW YORK
J. G. Braun Co., (Architectural only) *N.
Edgcomb Steel Corporation, Hillside, N.

NEW YORK
J. G. Braun Co., (Architectural only) *New York
Edgcomb Steel Corporation, Hillside, N. J.
Peter A. Frasse & Co., Buffalo, *New York, Rochester
Syracuse
Mapes & Sprowl Steel Co., Union, N. J.

Syracuse
Mapes & Sprowl Steel Co., Union, N. J.
Ontario Metal Supply, Inc., (Wire, Rod, Bar)
*Rochester

NORTH CAROLINA Southern States Iron Roofing Co., Raleigh OHIO Bridgeport Brass Co., (Wire, Rod, Bar) Cleveland Kasle Steel Corporation, Cleveland Mutual Manufacturing & Supply Co., *Cincinnati Vorys Brothers, Inc., *Columbus OREGON

Woodbury & Company, Coos Bay, Eugene, Medford and *Portland

and *Portland
PENNSYLVANIA
Athos Steel Service Co., *Philadelphia
Peter A. Frasse & Co., *Philadelphia
Peter A. Frasse & Co., *Philadelphia
Merchant & Evans Co., *Philadelphia
Penna. Industrial Supplies Co., Inc., *Pittsburgh
Potts-Farrington Company, Philadelphia
SOUTH CAROLINA
Southern States Iron Roofing Co., Columbia
TENNESSEE
Southern States Iron Roofing Co., Memphis and
Nashville
TEXAS
Moncrief-Lenoir Mfg. Co., Dallas, Harlingen,
*Houston, Lubbock, San Antonio and Temple
Vinson Supply Co., *Dallas, Odessa and Snyder
UTAH
Salt Lake Hardware Co., *Salt Lake City
VIRGINIA
Southern States Iron Roofing Co., Richmond

Clingan & Fortier, Inc., Seattle WISCONSIN Benjamin Wolff & Co., Milwaukee *Indicates main office

WASHINGTON

Look Under "Aluminum" in Your Classified Telephone Directory

10-5-54

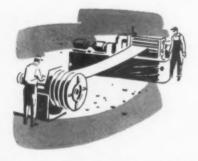
Rely on Your Nearby Reynolds Aluminum Distributor

A Partner in Production

On the job...but not on the payroll. That's the way we would like you to think of our warehouse services. Whenever we can, we will give you the help you need on production problems, backed by Reynolds technical service men in the field and the fully integrated staff at Reynolds home office. Let us show you how our services can solve some of your problems, and, at the same time, save you money.



PLUS THESE ADVANTAGES



EXTRA EQUIPMENT THAT LOWERS COST

Slitting, cutting, shearing, sawing and other specialized operations are moneysaving services we offer. Put our equipment and services to work for you. They'll help lower your costs.



CONVENIENT WAREHOUSE STOCKS

We can help you eliminate capital tieup in obsolete or idle inventory through our convenient warehouse stocks . . . you can cut your stock record keeping, accounting cost and warehouse overhead.



PROMPT SERVICE AND DELIVERY

You get fast delivery on both your "rush" orders and regular shipments. This helps you keep production on schedule . . . eliminates costly delays waiting for mill shipments.

Call us today for Reynolds Aluminum Distributor Service.



We're as near as your phone.

REYNOLDS



ALUMINUM

MODERN DESIGN HAS ALUMINUM IN MIND

For More Information Circle No. 246 on Inquiry Card-Page 17

DECEMBER, 1954

Sure, that old pump still works,

but how much does it cost to keep?

That rugged old pump of yours may not be the bargain that it seems. Let's do some arithmetic. If the efficiency of the old pump is 75% vs. the 85% efficiency of the new pump, you are paying more to keep it than you would to replace it. That's because a new unit of equivalent output uses less power. Thus it soon saves its own cost - then begins to pay dividends.

Let's take a specific example—a small general service pump

Old pump efficiency 70% 28.9 BHP

New pump efficiency 79% 25.6 BHP

On the basis of 1¢ per KWH, the 3.3 BHP saving for a 6000hour year (approximately 16 hours per day) amounts to \$150. This saving, capitalized in 4 years at 4% adds up to \$630. Yet the price of the new pump that saves \$630 is only \$438.

What would the pump replacement profit be in your particular case? Your De Laval representative can tell you exactly - in dollars and cents - as soon as he has the basic facts on your present installation. Call him in today or write to De Laval for Pump Fax Bulletin which includes a





807 Nothingham Way, Trenton 2, New Jersey

DOWEL PINS

HOW TO USE THEM

- 1. Precision Dowel Pins are principally used where parts must be accurately positioned and held in absolute relation to one another whether stationary or in motion. They facilitate quick disassembly and completely accurate re-assembly.
- 2. Allen Dowel Pins are also used as plug gauges.
- **3.** As plugs for determining angular dimensions of dovetail slides.
- **4.** As hinge and wrist pins in applications requiring initial and permanent accuracy.
- **5.** As accurate, economical roller bearings and axles.
- 6. As guide pins, stops and position locators.

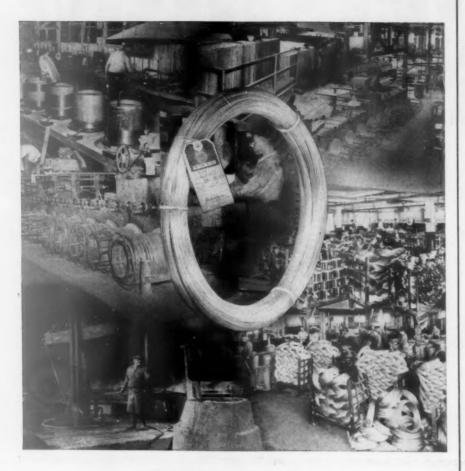
HOW TO JUDGE THEM

- 1. On precision, for low tolerance applications. (Allen Dowel Pins are ground to a maximum microinch finish of 6 RMS protected by a rust preventive.)
- 2. On strength, for shear resistance. (Allen Dowel Pins are made from special Allenoy Steel, heat treated. Single shear strength measures from 160,000 to 180,000 psi.)
- 3. On hardness of surface and a core hard enough to prevent "mushrooming" when driven into a tight hole. (Allen Dowel Pins have a surface hardness of 62-64 Rockwell C Scale and core hardness of 52-54. Average case depth .010 to .020 depending on size.)

The simple sure way to be sure of uniformly superior dowel pin quality is the same as in buying precision socket screws—get genuine Allens from your Industrial Distributor. Only he sells them but we will welcome your direct request for literature or application engineering assistance.

ALLE NAME OF PARTY Hartford 2, Connecticut U.S.A.

Available in 108 Standard Sizes from ½" x ¾" to 1" x 6". Standard tolerance .0002 oversize. Most sizes also standard in .001 oversize for repair work.



Most folks know how to say nothing, but few of them when.

Our sales representatives are paid to talk, but always when they know what they are talking about. They may not be able to suggest an answer to some of the complex problems of the affairs of state, but, when they have something to say about high carbon wires they speak from the book of knowledge—compiled through more than a quarter of a century of Johnson experience in the drawing of the highest grade specialty wire. These are "custom made" wires, made by special equipment employing special skills and a conscientious endeavor to make the best—better.

JOHNSON STEEL AND WIRE COMPANY, INC.

WORCESTER 1, MASS.

New York Philadelphia Pittsburgh Cleveland Detroit Akron Dayton Chicago Atlanta Houston Tulsa Los Angeles

A SUBSIDIARY OF PITTSBURGH STEEL COMPANY

For More Information Circle No. 249 on Inquiry Card-Page 17

Cleveland Ass'n Has Cost Cutting Forum

"How to Cut Purchasing Department Costs" was the subject of forum held at the October meeting of the Purchasing Agents Association of Cleveland. Serving on the panel were Joe Adams of White Motor Car Co. and Carleton Gaines of Snapout Forms Co. The dinner meeting was held, as usual, in the Rainbow Room of the Hotel Carter. Featured speaker was A. T. Colwell, vice president in charge of engineering, Thompson Products Co. His topic was "The Trend in Automobile and Aircraft Industry." This subject was of exceptional interest since much of Cleveland's industry is associated with autos and aircraft.

Coming Events On The Sixth District Calendar

During January 1955 the N.A.P.A. President, G. W. Howard Ahl, will visit eight of the fifteen associations in the Sixth District.

January 10, 1955

President Howard Ahl and District Vice President will visit Columbus, Ohio, Association. The Springfield Association will join the Columbus Association for this meeting.

January 11, 1955

President Howard Ahl and District Vice President will visit Cincinnati, Ohio, Association. The Dayton Association will join with Cincinnati for this meeting.

January 14-15, 1955

Executive Committee Mid-Year Meeting, St. Louis, Missouri.

January 18, 1955

President Ahl and District Vice President will visit Pittsburgh Association.

January 19, 1955

President Howard Ahl and District Vice President will visit Akron Association meeting to be held at Sanginiti's Restaurant, 207 East Market Street. The Canton and Youngstown Associations will join with Akron for this meeting.

NOTE: The New Castle Association has changed the date of its regular January meeting to January 26th to permit the members to attend either Pittsburgh on the 18th or Akron on the 19th to hear President Ahl's message.

January 20, 1955

District Vice President will visit Cleveland Association.

February 16, 1955

District Vice President will visit
(Please turn to page 224)
For More Information Circle No. 250

For More Information Circle No. 250 on Inquiry Card—Page 17→ le'll put our cards on the table...

S-ees

er

l,

le

e

A. 11

sne ne ne

ar

ce s-

on at ast ast

a-

its

ry at-8th si-

sit

sit

250

1G

when bidding for your molded plastics orders When you come to us for advise on your plastic molding needs, we'll give it to you straight. Our full house of the latest.

most modern molding machinery is your ace in the hole to beat increased competition. When the chips are down, it pays to have Aico as a partner. Let's arrange a friendly get-together and talk it over.

Drop us a line today

AMERICAN INSULATOR

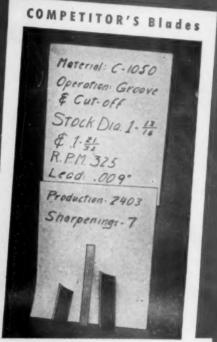
Since 1916
NEW FREEDOM. PA

NEW FREEDOM, PA. COMPRESSION MOLDY TRANSFER MOL COLD MOLDING INFGION MOIONG MOLDING OF REINFORCED PLASTICS including engineering counsel, mold making, trans-

including engineering counsel, mold making, transfer, compression, injection and cold molding plus the molding of reinforced plastics. With this array of services, Aico is in a position to make unbiased recommendations to your best advantage.







UNSOLICITED PHOTOS FROM USER.

HERE ARE THE FACTS . . .

One of the high-volume operations of a large manufacturer of oil-well and structural steel equipment is cutting off 1-13/16" bar stock, C-1050 steel. The Six-Spindle Automatic is running at 325 rpm with a feed of .009" per revolution. Competitive blades averaged only 2403 pieces with only 343 pieces per sharpening. P&W T-Cut Blades . . with their superior ability to resist burning and wear . . . produced 5320 pieces with 591 pieces per sharpening . . . and are considerably longer after 9 grinds than the competitive blades were after only 7 grinds. In addition, blade breakage has been reduced to a minimum.

In this example, Pratt & Whitney Blades delivered nearly twice the work pieces per grind; resulting in a very satisfactory reduction in tool costs. The wide experience of P&W is available to you, and a factory-direct Sales Engineer . . . working from a near-by Branch Office . . . will be pleased to help in your particular application.





DIVISION NILES-BEMENT-POND COMPANY
19 Charter Oak Blvd., West Hartford, Connecticut Please send my copy of Circular No. 561 featuring "Pratt & Whitney Cutting-Off Blades".

N	A	M	E	
	-		•	-

POSITION COMPANY.

CO. ADDRESS_

STATE ZONE

(Continued from page 222)

New Castle Association.

March 18, 1955

District Vice President will visit North Central Ohio Association.

March 19, 1955

Sixth District Spring Council Meeting, Mansfield, Ohio. April 14, 1955

District Vice President will visit Northwestern Pennsylvania Association at Franklin, Pennsylvania.

May 29-June 1, 1955

N.A.P.A. Annual Convention, Waldorf-Astoria, New York. October 14-15, 1955

Sixth District Council Meeting and Conference, Webster Hall, Pittsburgh, Pennsylvania.

1 1 1 M. P. Addresses B.C. Ass'n

Featured speaker at the October meeting of the Purchasing Agents Association of British Columbia was the honorable Harold E. Winch, Member of Parliament, In a dynamic, off-the-cuff speech he stated that now is the time for the Canadian government to assist sales of home appliances, textiles, automobiles, plumbing, etc., by combatting cheap foreign imports, financial assistance to consumers, and removal of high taxes. He pointed out that even though many Canadian homes need the aforementioned essentials, workers producing them are unemployed.

On October 26, the educational meeting was held. It was a continuation of the highly successful presentation on "Effective Letter Writing" previously held. Mr. Ralph Kluckner of B. C. Electric presided. Also on October 26, PA's toured the operations of the Canadian Broadcasting Company's television station. Now when they settle down in front of their TV sets, they know what goes on behind the scenes to bring them the programs they enjoy.

Central Michigan Association

The topic at a recent meeting of the Purchasing Agents Association of Central Michigan was one that warrants more and more attention from PA's and buyers. It was plastics. On hand to discuss "New Uses for Plastic" was Paul Ritchey, PA for Kish Resin Co. in Lansing.

New members of the fast growing Central Michigan group include: Herbert R. Leece, Timken Silent Automatic Co., Jackson; Hubert D. Federer, Teer-Wickwire & Co., Jackson; and Don R. Smith, Lansing Co., Lansing.

For More Information Circle No. 260 ←on Inquiry Card—Page 17

FOR RUGGED SERVICE...



- Heavy shafts, bearing to bearing
- Indestructible pressure-cast rotors
- Shock-resistant frame and bearing-bracket construction



... AND THE BEST PRE-LUBRICATED BEARING DESIGN
The Reliance pre-lubricated bearing provides four times more operating

hours without re-lubricated bearing provides four times more operating hours without re-lubrication than any other bearing used in motors today. And—whatever your lubrication schedule—you just can't grease'em wrong! To get the complete "inside story" on motor bearings, write today for new Bulletin B-2202. It contains hard facts on the advantages of the Reliance pre-lubricated bearing design, with cutaway view, cross-section diagram, comparison chart, and statements by bearing manufacturers. B-1485V

RELIANCE ELECTRIC AND ENGINEERING CO.

1056 Ivanhoe Road, Cleveland 10, Ohio . Sales Representatives in Principal Cities

For More Information Circle No. 261 on Inquiry Card-Page 17

DECEMBER, 1954

0

risit

neil

visit

al

ting

ber ents was ach, dy-ted naof noing asval

nes als, un-

nal nful ter lph

ed. ed

ion wn ow

to

of

on

nat

on

S-

es

A

ng le: nt D.

o.,

For Stampings

...look for the PLUS

beyond



Ever think how much time good quick service saves you and other key men in both office and plant?

Excellent service — proved every business day for 39 years — is another of the many plusses you get when you buy Detroit stampings.

Look for the Plusses beyond the price the next time you buy stampings!

And be sure to try DETROIT

DETROIT STAMPING

408 Midland Ave., Detroit 3, Mich.

"America's Best-Known Jobbing Stampings Manufacturer"

For More Information Circle No. 262 on Inquiry Card—Page 17

Detroit Association Featuring Program Innovations

Members of the Purchasing Agents Association of Detroit are certainly enjoying innovations with their recently installed president, Marvin A. Klang; first vice president, Fred Alcorn; second vice president, Russell A. Stark; and treasurer, Al Kay. These men took office at the September meeting.

The October meeting, held on the 21st, really broke with tradition. At 5:45 a forum was held on "Today's Purchasing Agent, a Product of Industry-Education Cooperation." Expressing industry's desire to cooperate in a greater educational effort were Jim Cameron of Ford Motor and W. Williams of American Motors

Speaking from the educator's point of view were Dr. F. Mauser of Wayne University and Professor C. Hardwick of the University of Detroit. They pointed out that, "if purchasing wants more emphasis placed on its needs in the university curriculum, it will have to demonstrate this by hiring more graduates." W. J. Pierce of Detroit Edison, education chairman, served as moderator of the discussion. The ideas expressed by panel members promoted considerable discussion among members which continued during dinner.

Featured speaker at the dinner meeting was Jennings Randolph assistant to the president, Capital Airlines. Mr. Randolph gave an interesting and inspiring talk on "The Public and You." Commodity reports covering fuel, steel, and non ferrous metals have long been a important part of Detroit Association meetings. This year, special reports on various commodities have been added to the program Harry Wurster of Wyandote Chemicals has covered chemicals, including synthetics and plastics, at the first two meetings this year.

On November 16, Detroit PA' journeyed across the Detroit Rive to Windsor, Ontario for a join meeting with the Essex-Kent Association. Highllight of the get-together was a tour of the Genera Motors of Canada plant. Member are now looking forward to thei annual Ladies Nite and Christma Party on December 16.

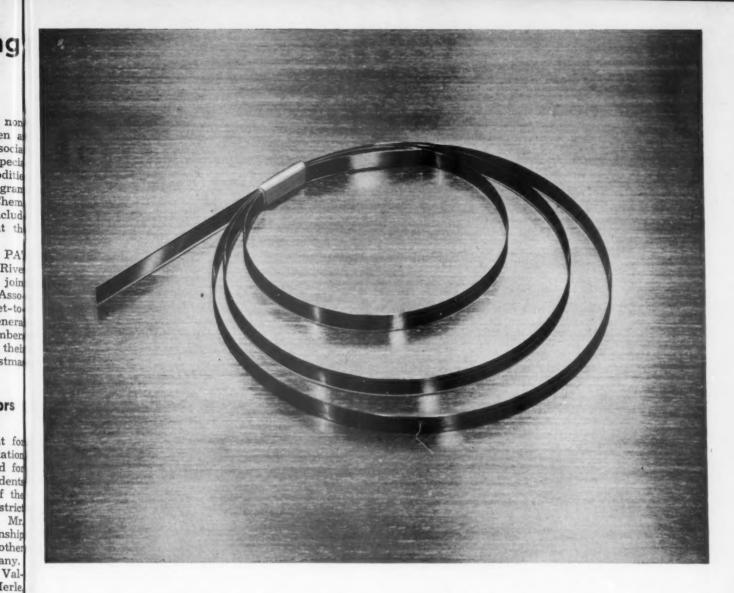
Lehigh Valley Ass'n Honors Past Presidents

It was past president's night for the Purchasing Agents Association of the Lehigh Valley. On hand for the occasion were 15 past presidents of the association. Highlight of the evening was a talk by 8th District Vice President Frank Whyte, Mr. Whyte spoke on the relationship between purchasing and the other four major activities in a company.

New members of the Lehigh Valley group include: Milton O'Merle, Tru-Matic Machine & Tool Co., E Stroudsburg, Pa.; Sigmund S. Stewart, Air Products Inc., Emmaus, Pa.; and Elmer S. Barto, Rodale Manufacturing Co., Emmaus.

Feature of Detroit Association meetings is a "browsing rack" located adjacent to the dining room. Plastic pockets on the display board are filled wih NAPA literature and at least one member of the education committee is on hand to answer questions.





TWO STRIPS OF COLD-ROLLED STEEL?

That's right. The picture above was made from a photograph of two strips of Uddeholm coldrolled strip steel, both shown here actual size. You see one, \$16-inch wide, but where is the second? You've probably guessed it: the entire background of the picture is a wide strip of cold-rolled steel.

We took this picture to illustrate the great range of sizes you can get when you order Uddeholm Swedish strip steel.

Widths from 1/8 to 16 1/4 inches.

Thicknesses from .001 to .125 inches; tolerances as close as $\pm 8/100,000$ of an inch.

Stocks of clock spring steel, bandsaw, flapper valve, thickness gauge, razor, and many other

types, in many finishes, are carried in New York, Cleveland, and Los Angeles.

WRITE FOR SUBSCRIPTION TO UDDEHOLM'S MONTHLY STOCK LIST OF STRIP STEELS.

UDDEHOLM, 155 East 44th St., New York 17, N. Y.

Please send me monthly strip steels stock list.

NAME			
TITLE			
COMPANY			
ADDRESS			
CITY	ZONE	STATE	



UDDEHOLM COMPANY OF AMERICA, INC.

Tool and Die Steels Specialty Strip Steels New York: 155 East 44th Street, MUrray Hill 7-4575 Cleveland: 3756 Carnegie Avenue, HEnderson 1-7440 Los Angeles: 5037 Telegraph Road, ANgelus 2-5121

For More Information Circle No. 263 on Inquiry Card-Page 17

)., E

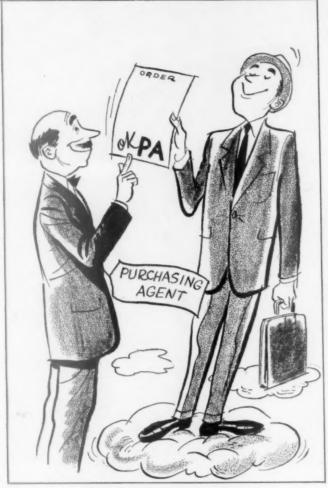
Stenaus, odale

dining

t one

El

Is your Salesman Getting...





A BOOST ... or THE BOOT?

How often have you heard a salesman complain, "I sold the idea, but their Purchasing Agent gave the order to a competitor."

It's a very common, a very sad story. But it has a simple moral: You've got to sell the Purchasing Agent, too. You've got to sell the PA on your product and on your company.

Advertising can help you do the job. That's why so many leading industrial advertisers use PURCHASING Magazine. Read regularly by the men responsible for 85% of industry's buying, PURCHASING gives you the largest available coverage of industrial PAs.

If you sell an industrial product . . .

put PURCHASING power behind it!

PURCHASING MAGAZINE

205 East 42nd Street, New York 17, N.Y.

The basic magazine on any industrial advertising schedule!

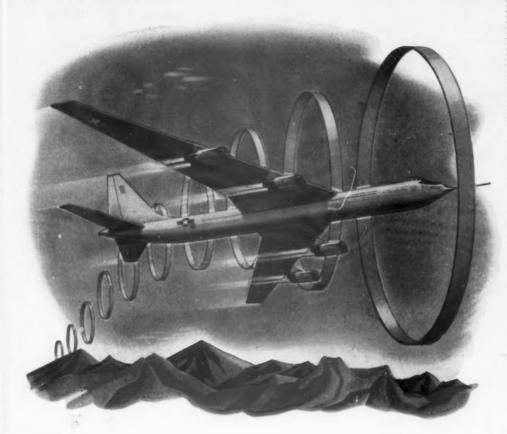








A CONOVER-MAST PUBLICATION



73 American Welded parts

IN EVERY J-57 JET ENGINE

For 35 years American Welding know-how has kept pace with the aviation progress. Today a large part of our extensive welding, machining and fabricating facilities are devoted to the production of welded components for U. S. jet engine manufacturers — 73 different kinds of parts on the Pratt & Whitney Aircraft J-57 turbojet alone.

This knowledge of welding and fabricating has also been applied, to other industries. For example, if you produce a component like those shown here — or if you think fabrication by welding may be the solution to a particular problem —let us know. Our Product Development Division has been able to assist many companies with their metal fabricating problems and will be glad to consult with you.

THE AMERICAN WELDING & MANUFACTURING CO.
460 DIETZ ROAD * WARREN, OHIO



AMERICAN WELDING



WELDING . MACHINING

FABRICATING

For More Information Circle No. 264 on Inquiry Card-Page 17



Tire Bases

Steel bands formed and flash butt-welded into wheel tire base for industrial trucks.



Wheel and Rim Assemblies

Weldment of carbon steel bar and plate for use on heavy earth-moving equipment.



Motor Frames

Steel bars and plate formed and welded into industrial motor frame.



Compressor Cases

Welded band for hermetically sealed refrigerator compressor.



Armature Spiders

Weldment of six parts combining plate and bar stock,



Turbine Frame Assemblies

Formed sheet metal bands and flash butt-welded rings fabricated into a jet engine component.



Send for Free Catalog of American Welding Facilities

in this ONE PLANT





Generalift Pallet Boxes save \$15,000 a year!

It once took five men—just to store and ship automotive components produced by Excelwel Manufacturing Company of Detroit. Now two men handle the job—easily—with Generalift Pallet Boxes. That's only one aspect of the many savings brought about in one year, in one plant—with Generalift. Excelwel's plant superintendent estimates these savings at \$15,000 a year.

Here are 4 ways Generalift Pallet Boxes can ease your handling and shipping problems:

- 1. They arrive "flat" for easy storage.
- 2. They're palletized for easy fork lift handling.
- They're light—but extra sturdy. They carry a payload of well over a ton—safely and easily.
- They stack three and four high—fully loaded—save valuable warehouse space.

Write today for full details. Find out how Generalist can help solve your handling, storage and shipping problems—at a saving.

Engineered Containers for every shipping need

Factories: Cincinnati; Denville, N. J.; East St. Louis; Detroit; Kansas City; Louisville; Milwaukee; Prescott, Ark.; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

General Box Company, 1843 miner street, des plaines, ill.

For more Information Circle No. 265 on Inquiry Card-Page 17

Brown University Establishes Course In Purchasing

As part of its regular University Extension Program, Brown University, Providence, has included a course in Purchasing Principles and Practices. D. Francis Finn, purchasing agent for the university, is conducting the course.

Current registration in the class is 33, including purchasing agents, buyers, clerks, expediters, and other personnel who have jobs related to purchasing. They will atend 12 weekly sessions, the first of which was held on September 29.

The establishment and indicated success of the course are in part credited to the Rhode Island Purchasing Agents Association. The association has been encouraging the university to include such a course in its extension curriculum, and has given the course a good deal of publicity among its members.

Niagara PA's Welcome Mgr. Ahl

Guest at the opening meeting of the Purchasing Agents Association of Niagara District was G. W. Howard Ahl, president of NAPA. Other notables included District 8 Vice President Frank Whyte and A. L. Francis, president of the Canadian Council of Purchasing Agents. The meeting started with a commodity report by H. G. Morrow of McKinnon Industries. Highlight of the meeting was a talk by Mr. Ahl stressing the self-education theme of membership in an NAPA chapter.

The following week some 41 members and 19 guests of the association were on hand for a trip to the Toronto plant of the American Brass Co. PA's got a greater insight into the wide variety of products made at this modern plant.

Ft. Worth Activities

Highlight of the November meeting of the Purchasing Agents Association of Ft. Worth was a discussion on "Standardization." The program was presented by Otto Dworak, chairman of the Standardization Committee.

On November 17, there was a plant visit. Members toured the Bennett plant of the Acme Brick Co. and were dinner guests at its beautiful lake clubhouse. Next event on the Ft. Worth calendar is the annual Christmas party on December 20 at the Hilton Hotel.

For More Information Circle No. 266 on on Inquiry Card—Page 17→
PURCHASING



... call ILLINOIS GEAR

Want real action on your gear orders? You'll get it when you deal with Illinois Gear . . action that guarantees you highest quality and precision . . action that assures you on-time delivery . . action that offers you around-the-clack production for your gear emergency.

Illinois Gear, the World's largest, most modern, bost equipped gear manufacturing plants, offers you the coordinated, synchronized action that makes a champion. It results from broad experience, second-to-none facilities and above all the will to produce!

For action on your gear orders, send them to Illinois Gear.

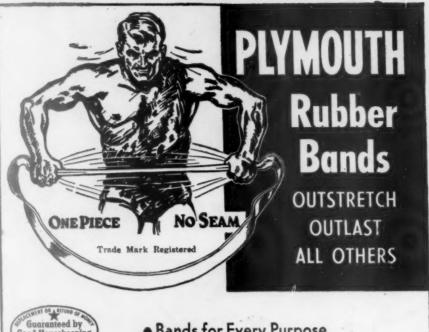




Gears for Every Purpose ... one gear or 10,000 or more

ILLINOIS GEAR & MACHINE COMPANY

2108 HORTH WATCHEZ AVENUE . CHICAGO 28, ILLINOIS



• Bands for Every Purpose

• Saves Time and Labor in Production

• We'll Make Them for Your Special Needs

NATIONALLY DISTRIBUTED . . . AVAILABLE AT YOUR REGULAR SUPPLIERS All Plymouth Standard Bands Made to Federal Specifications

PLYMOUTH RUBBER COMPANY, Inc., Canton, Mass.

For More Information Circle No. 267 on Inquiry Card-Page 17

N. Y. Federal Buyers Hear G. H. Gutekunst

The Navy Theatre in New York City was the site of the October meeting of the Federal Procurement Officers Association of Greater New York. Guest speaker at the meeting was George H. Gutekunst, Jr., associate editor, Purchasing. His topic was "Purchasing Office Equipment". Mr. Gutekunst pointed out the importance of understanding the "work-flow" pattern of an office and its relationship to good office purchasing practices. He briefly analyzed some of the office purchasing problems and indicated purchasing's assistance toward eliminating them. Following the talk, Thomas E. O'Rourke, president of the association, conducted the regular business meeting and then held a discussion on new government buying directives.

ADDITIONAL **ASSOCIATION NEWS** ON PAGE 254

Stock Bars

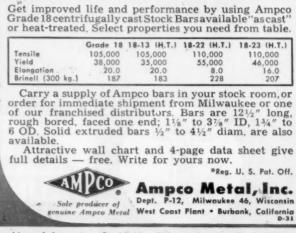


SCRANTON 2, PENNA. For More Information Circle No. 268 on Inquiry Card-Page 17

232

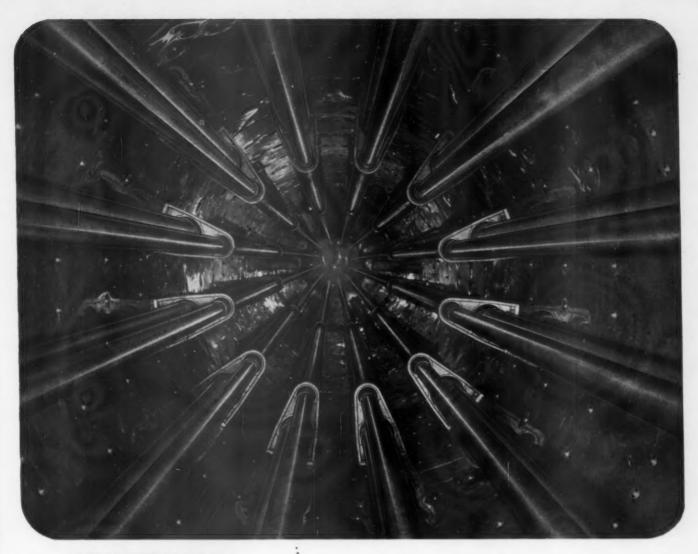
PROMPT

DELIVERY



Replacements last longer

than original parts when you use



TRENTWELD STAINLESS TUBING

gives longer operating life...



FREE—Write for your copy of the new TRENTWELD price calculator. Just a tug at the selector slide gives you complete price information and weight per foot of the tubing size and grade you need. Better send for your free copy now. TRENTWELD stainless steel tubing gives economical, trouble-free service over long periods of use. It's an ideal choice, for example, for applications such as the 60-foot rotary kiln dryer you are looking into in the photograph above... operating at high temperatures and where corrosive conditions are encountered.

In fact, you just can't buy better tubing than TRENTWELD for any application. That's because TRENTWELD stainless and high-alloy *welded* tubing is a product of tube mill specialists. Each tube has a uniformly sound weld indistinguishable from the parent metal and just as strong and corrosion-resistant.

Whether or not your job is as large and complex as a rotary dryer, you can specify TRENTWELD tubing with confidence. And when it comes to tubing sizes and finishes, Trent offers the widest range in the industry . . . from 1/8" to 40" O.D. and up. Next time you have a job involving tubing, remember—you can make it better with TRENTWELD.





STAINLESS STEEL TUBING

TRENT TUBE COMPANY, GENERAL SALES OFFICES, EAST TROY, WISCONSIN (Subsidiary of CRUCIBLE STEEL COMPANY OF AMERICA)

For More Information Circle No. 270 on Inquiry Card-Page 17

DECEMBER, 1954

Personalities



IN THE NEWS

Edwin S. Ladley has been appointed Director of Purchases for Hercules Powder Co., Wilmington, Del. He succeeds Lawrence J. Finnan, Jr., who is retiring after 40 years of service to the company. Mr. Ladley joined Hercules in 1942 as a clerk in the secretary's office. In 1942 he was transferred to the purchasing department, and, in 1944, he was named a Buyer. In 1951, he became Assistant Director of Purchases. Prior to joining Hercules, he was with American Road Machinery Co., Fibre Specialty Mfg. Co., and James M. Worrall Co., Inc. At the same time, it was announced that William A. Hoffman, Jr., had been named Assistant Director of Purchases. Mr. Hoffman joined Hercules in 1940, in the smokeless powder division of

the company's Kenvil, N. J., plant. He went to the purchasing department in 1946 and became a Buyer two years later. In 1950 he was appointed a Senior Buyer.

C. E. Antony, formerly Assistant Director of Purchases for New Idea Division, Avco Mfg. Corp., Coldwater, Ohio, has been made Director of Purchases. He succeeds E. C. Carmen, who has been named administrative assistant to the general manager. Mr. Antony joined New Idea as a payroll clerk in 1934 and worked in the cost accounting department before being transferred to the purchasing department.

John H. Harmon, Jr., is now General Purchasing Agent of The Pure Oil Co., Chicago. Formerly Assistant General Purchasing Agent, he succeeds



J. H. Harmon, Jr.

G. L. Parsons, who is retiring after 30 years in the post. Mr. Harmon joined Pure Oil in 1934 and has worked in several divisions. He was a student engineer and a junior engineer in the research and development laboratories. Later, he worked in Minneapolis and Cincinnati as an industrial oil salesman and finally became assistant chief clerk in the purchasing department in 1940. He was made a buyer in 1942 and was advanced to Assistant General Purchasing Agent in 1947.

The appointment of Carl J. Koelsch, Jr., as Associate Director of Purchases, has been announced by Trailmobile, Inc., Cincinnati. Mr. Koelsch will coordinate with W. H. French, all the purchasing activities of Trailmobile. Mr. Koelsch, born in Germany, settled in the U. S., at 14, in Pittsburgh. His first position was a clerical one with

(Please turn to page 236)



Fred G. Rawlings (right) retiring Purchasing Agent for Hood Rubber Co., a division of the B. F. Goodrich Co., Watertown, Mass., receives a pinseal wallet and a sum of money donated by his friends at Hood from C. L. Sheldon, Manager of Purchasing. Mr. Rawlings has been at Hood for 26 years, starting as supervising engineer, then staff engineer, superintendent of Hard Rubber Finishing and, in 1939, Purchasing Agent.

We can give you PAPER to package





...two more examples of 600 Tailor-Made Riegel Papers

Riegel can make a tough duplex paper for wrapping heavy coils of steel strapping . . . or produce a moisture-proof, anti-tarnish, glassine-polyethylene laminate for packaging small parts like delicate hair springs. It is another example of the remarkable range of facilities we can put to work for you whenever you have a paper problem. Just tell us what the paper must do for you. Write now to Riegel Paper Corporation, P.O. Box 250, New York 16, N.Y.

Riegel SPECIAL PAPERS For INDUSTRY

IT'S PAPER



PLUS FOIL
POLYETHYLENE
PLUS GLOSS COATING
PLUS INK

Protecting the freshness and flavor of top-selling packaged foods has long been a Riegel specialty. Lipton's Soup, for example, uses a lamination of paper, polyethylene and foil... also printed and gloss-coated by Riegel. This is another interesting example of the remarkable range of facilities we can put to work for you. Just tell us what you want paper to do. Write to Riegel Paper Corporation, P. O. Box 250, New York 16.

Riegel SPECIAL PAPERS For INDUSTRY



MAKE DIRT COME CLEAN

... it's just one of 600 Tailor-Made Riegel Papers

No need to shake out a dirty vacuum cleaner today, thanks to modern throw-away bags made of special Riegel paper. Porosity is carefully controlled to handle large volumes of air, yet stop the smallest particles of dust.

It's one more example of Riegel's ability to make paper for almost any need. Tell us what you want paper to do for you. Write to: Riegel Paper Corp., P.O. Box 250, New York 16, N. Y.

Riegel

SPECIAL PAPERS

for
INDUSTRY



Is your plant protected?

Many factories and plants find an Anchor Fence just what they need to keep out thieves, vandals, agitators... find an Anchor Fence ideal to control traffic effectively at minimum cost. What's more, an Anchor Fence permits safe outdoor storage. Valuable indoor space can be put to profitable productive use.

Anchor Fence provides these benefits on a *permanent* basis. Exclusive deep-driven anchors hold this chain link fence erect and in line regardless of soil or weather conditions... yet fence can be moved quickly and

easily to new locations. Square, tubular steel end, corner and gate posts enhance appearance, give greater strength. H-beam line posts increase installation durability. Square, tubular steel frame gates, arc-welded at the corners for greater strength, complete an Anchor Fence installation. So insist on Anchor Chain Link Fence . . . the fence with the zinc coating applied after weaving—not before. Write for informative "Industrial Catalog." Address: Anchor Post Products, Inc., 6615 Eastern Ave., Baltimore 24, Md.

Anchor Fence

Division of ANCHOR POST PRODUCTS, Inc.

Plants in: Baltimore, Maryland; Houston, Texas, and Los Angeles, California.

Branches and Warehouses in all principal cities.

For More Information Circle No. 272 on Inquiry Card-Page 17

(Continued from page 234)

the U. S. Steel Corp., Pittsburgh. In 1920 he went to Youngstown where he later became secretary and treasurer of the Newton Steel Co., which later merged with Corrigan-McKinney Steel Co. He joined Fisher Body Co., Detroit, in 1932 as a steel buyer and purchased all the armor-plate for the tank division during World War II. He joined a large trailer firm in 1943, as Director of Purchases, and became a vice president in 1953.

American Cyanamid Co., New York, has established a Coal Tar Chemicals Section within its General Purchasing



E. C. Medcalf

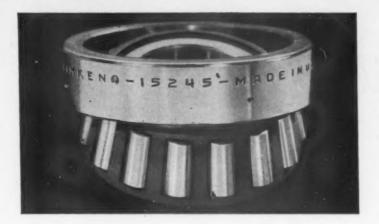
Department. Eugene C. Medcalf has been named Manager of the section, which will operate at the firm's Bound Brook, N. J., plant.

Walter S. Longbottom has been named Chief Purchasing Agent of the recently formed Farnsworth Electronics Co., Ft. Wayne, Ind., a division



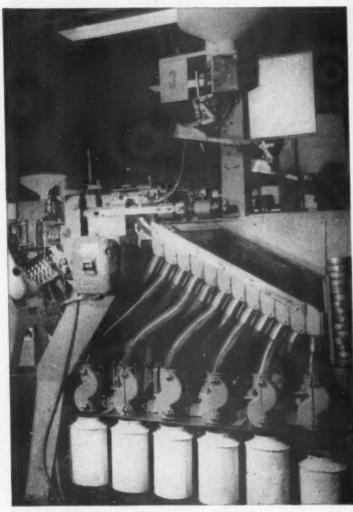
W. S. Longbottom

of International Telephone and Telegraph Corp. Mr. Longbottom has been associated with the Capehart-Farnsworth Co., another IT&T division, for five years as Chief Purchasing Agent for Technical Products. Before joining Capehart, he spent four years as Purchasing Agent for Boonton Radio Corp., Boonton, N. J., and had been Resident Purchasing Agent of the Camden, N. J., offices of RCA from 1935 to 1947.



THE NUMBER 15245 on the bearing cup, together with 15123 on the cone, means it's a tapered roller bearing of a certain size. But when it's next to the trade-mark "Timken" it has another important meaning: It tells of the bearing's fine quality and the services that go with it—important factors to a top P.A.

The number with a double meaning



WE MATCH ROLLERS IN EACH BEARING to almost microscopic limits. Grinding and honing rollers to extremely close tolerance isn't enough. This machine sorts them into even more precise sub-sizes. Result: All the rollers in each bearing are the same size; each roller carries the same load. This assures quieter operation, longer life. It's just one more step we take to make Timken® bearings number 1 for value.



TO GUARANTEE THE HIGH QUALITY of the steel used in Timken bearings, we make our own. We're the only bearing manufacturer in the U. S. A. that does. And even though it's the finest bearing steel ever developed, we're always looking for ways to improve it. For instance, we use this X-ray diffraction unit to study the residual stresses present in heat-treated steel parts.



OUR ENGINEERS WORK TO SOLVE YOUR PROBLEMS—For example, data from this test, which runs bearings under abnormal conditions, has helped car makers get better performance from their Timken bearings. Quality and service make Timken bearings your number 1 value. And their public acceptance helps you sell Timken bearing equipped products. So always specify "Timken" with the bearing number. The Timken Roller Bearing Company, Canton 6, Ohio, Canadian plant: St. Thomas, Ontario. Cable address: "Timrosco."

Quality, service and public acceptance make TIMKEN number 1 for VALUE

NOT JUST A BALL O NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER TO BEARING TAKES RADIAL AND THRUST- 1-LOADS OR ANY COMBINATION-

For More Information Circle No. 273 on Inquiry Card-Page 17

armed to the leel



The knights of old used shining armor plate to protect themselves against the dangers of their trade. When you move long-distance the Mayflower way, Mayflower's expert packers protect your dishes, glassware and other valuables with the latest scientific methods and materials. Mayflower

packers are specially trained to safeguard all your fragile articles so that they will ride safely to your new home anywhere in the United States or Canada. For a move that's easy for you and safe for your furniture, use Mayflower Moving Service.



AERO MAYFLOWER TRANSIT COMPANY . INDIANAPOLIS

Mayflower's organization of selected warehouse agents provides on-the-spot representation at the most points in the United States and Canada. Your local Mayflower agent is listed in the classified section of your telephone directory.



For More Information Circle No. 274 on Inquiry Card-Page 17

James Clark McGuire, Director of Purchase and Administrative Services of the Port of New York Authority, was awarded the bi-state agency's Distinguished Service Medal for "unusually efficient and distinguished service" at ceremonies held, recently, in the Barbizon-Plaza Hotel, New York.



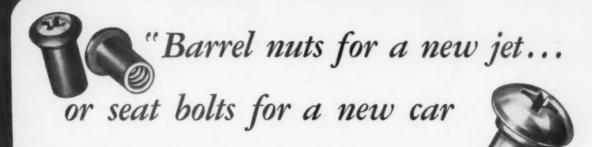
J. C. McGuire

Mr. McGuire joined the engineering staff of the Authority in 1927 and organized the agency's centralized purchasing department in 1931. Since that time he has been in charge of all buying for the Port Authority's 17 terminal and transportation facilities. He is a member of the Purchasing Agents Association of New York, N. A.P.A., and was chosen chairman of the governmental, educational and institutional group of N.A.P.A. for the third consecutive year in 1954.



J. H. Schul

A major reorganization within the manufacturing division of Coleman Co., Inc., Wichita, Kansas, has advanced John H. Schul from the position of General Purchasing Agent to the newly created post of Director of Material. In his new capacity, Mr. Schul will direct all production planning, scheduling and production control functions, and purchasing, stores, shipping and inplant transportation activities. He has been with the Coleman Company since 1936 and has been General Purchasing Agent for the past





AMERICAN delivers Non-Corrosive Specials

Non-Corrosive Specials fast and right!"

Special fasteners are no headaches, here. For American's wide experience in non-corrosive metals, and unmatched know-how in cold heading, have taken the knots out of many a knotty problem. And often a lower-cost fastener has resulted, regardless of material costs.

The American Phillips Fasteners shown here are cases in point. In both cases, American metallurgists and production engineers worked out a special solution ... added the easy-driving, cost-cutting advantage of the engineered American Phillips Recessed Head . . . and gave each customer a low-cost special that has become a standard part of his product.

Now, what's so tough about your fastening problem? Let's have a look at it. Write:

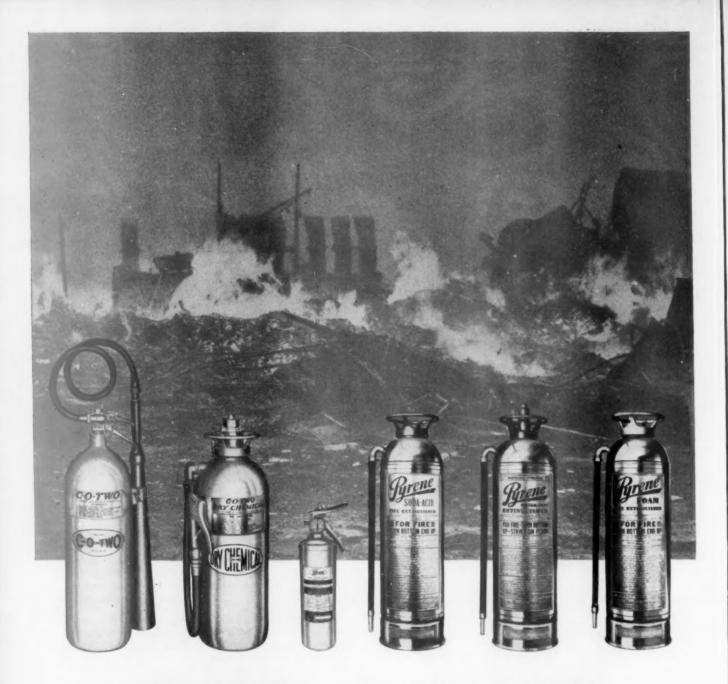
marks the spot
. . . the mark of extra quality



PHILLIPS HEADquarters
WILLIMANTIC, CONNECTICUT

Plants at Willimantic, Conn. and at Norristown, Pa. Warehouse and office at Chicago Office, Detroit, Michigan

For More Information Circle No. 275 on Inquiry Card-Page 17



ALL TYPES...ANY CLASS FIRE!

Since different fire hazards require different types of fire extinguishers, PYRENE—C-O-TWO manufactures all types... the finest and most complete line on the market today.

When doing business with PYRENE—C-O-TWO, you receive unbiased advice on what is best for your particular fire hazards, whether class A, B or C.

Also, there is a well-rounded sales engineering organization having nation-wide representation to render top quality service wherever you're located.

Don't take unnecessary chances . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts now!



PYRENE - C-O-TWO

NEWARK 1 . NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

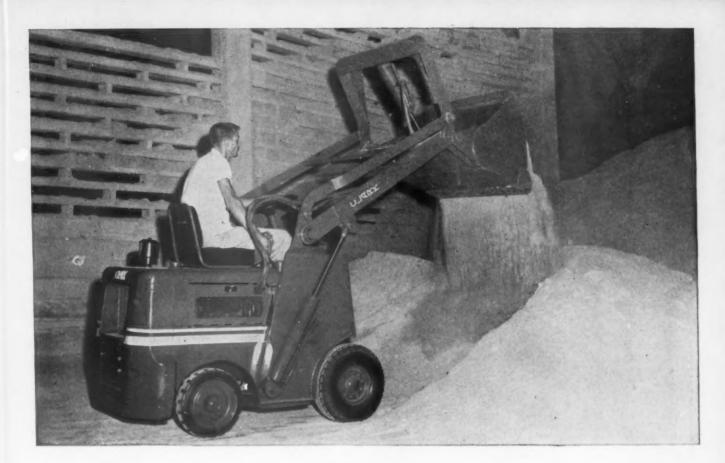


COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE . DRY CHEMICAL . VAPORIZING LIQUID . SODA-ACID . WATER . CHEMICAL FOAM . AIR FOAM

For More Information Circle No. 276 on Inquiry Card-Page 17



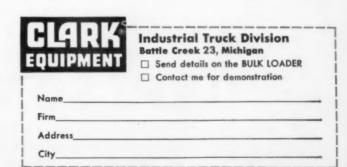
Fits places and budgets that no other loader can!..

Clark's new BULK LOADER

This little end-loader will do many of the things that bigger, more expensive machines can do—plus a lot of things they can't do! The Clark BULK LOADER has the shortest turning radius of any machine on the market—5'10". Within its capacity (11 cu. ft., 1200 lbs.), it's unbeatable for handling loosely packed material in cramped quarters—boxcars, narrow aisles, close approaches to hoppers. There's plenty of power, plenty of traction for light shoveling, with speeds up to 8½ mph in both directions. Fully loaded, the BULK LOADER will climb a 14% grade.

Ask your Clark dealer for a demonstration of the new Bulk Loader. Send the coupon and we'll make the arrangements. Bucket action is also outstanding. Low-level independent tilt-back guarantees full bucket loads every time, permits carrying in lowered position without spillage. The 60 degree dumping action has a full 76 inclearance under the hinge, 47 in. under the lip.

Compare the performance of this new BULK LOADER against competitive machines. And remember that you'll have no service problems with this new Clark machine—parts and components are mainly interchangeable with the standard Yardlift-20. Service is immediately available from your local Clark dealer, listed in the Yellow Pages under "Trucks, Industrial."



For More Information Circle No. 277 on Inquiry Card-Page 17



IS THE WORD
FOR THESE
STAINLESS STEEL
BLANKS...

Not Unusual IN PRODUCTION AT... No matter how you look at it, these heavy gauge Blanks are unusual.

Unusual because they are made of Type 302 stainless steel. Unusual because they are 5" thick x 7¾" ID x 78½" OD and weigh approximately 7000 pounds each. Unusual because each required special cutting and machining to produce its rough machined shape. But such jobs are not unusual at G. O. Carlson, Inc.

As specialists in working stainless steel, Carlson provides an unique service for you

- ... by having skilled workers produce your stainless shapes.
- ... by making full use of the specialized cutting and machining equipment at Carlson.
- ... by giving you exactly what you want "on time" to keep your production running smoothly.
- ... by eliminating shipping charges on material you cannot use.

Put your stainless steel plate requirements in good hands...that means, G. O. Carlson, Inc.

Stainless Steels Exclusively

CARLSON, INC

Plates • Plate Products • Fergings • Bars • Sheets (No. 1 Finish)

THORNDALE, PENNSYLVANIA

District Sales Offices in Principal Cities

For More Information Circle No. 278 on Inquiry Card-Page 17

(Continued from page 238)
six years. Mr. Schul has announced
that A. F. Easley, Assistant Purchasing
Agent, is now Production Control Man-





A. F. Easley

W. R. Oehlert

ager. And, Wilbur R. Oehlert, formerly assistant to Mr. Schul, has been made Purchasing Agent.

Thomas A. Edison, Inc., Orange, N. J., has appointed Alex N. Telischak as Assistant General Purchasing Agent.



A. N. Telischak

He has been with the company for 14 years in the purchasing department, first as a clerk and later as a buyer. His job entails the expenditure of more than \$13,000,000 yearly for everything from coal and fuel to a quarter of a million dollars worth of diamonds for the firm's Voicewriter Division.

Carl C. Svoboda is in charge of purchasing construction materials and raw materials for the newly formed Mobay Chemical Co., St. Louis. Mr. Svoboda has been Purchasing Agent for Monsanto Chemical Co., having joined the firm in 1930. Mobay is jointly owned by Monsanto and Farbenfabriken Bayer, A.G. of Leverkusen, Germany.

Kaiser Aluminum & Chemical Corp., Oakland, Calif., has named Robert S. Aubry as Assistant to Duncan Gregg, Manager of Purchasing. Mr. Aubry has had more than five years experience in the purchasing field, first with Proctor and Gamble and later with the Westinghouse Electric Corp. His most recent position was executive staff assistant to the headquarters purhasing staff of the vice president of purchasing of Westinghouse.

(Please turn to page 244)

VEE-DAM RINGS

Unique, new and revolutionary design of LINEAR VEE-DAM Rings now does what no other packing has ever done: It completely eliminates labyrinth leakage, regardless of the fit at the ring joints. Even when gaps occur, through careless installation, or from variations in bore size, fluid can't leak past LINEAR VEE-DAM Rings!

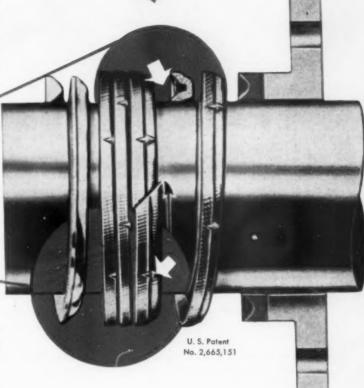


in the grooved hinge area of each ring hermetically seal off center groove sections when rings are stacked together . . . eliminate all labyrinth flow.

EXTERNAL-ABUTMENTS

on the shoulders of each ring prevent lateral leakage and provide stabilizing support.

LINEAR VEE-DAM Rings save on installation and maintenance...reduce down time. They last longer, work better! We're molding them in a variety of sizes and compounds. Let us show you how VEE-DAM Rings can solve your packing problems!



PERFECTLY ENGINEERED PACKINGS'

LINEAR

LINEAR, Inc., STATE ROAD & LEVICK ST., PHILA. 35, PA





The appointment of Logan H. Cashmen as Purchasing Agent, has been announced by Dumore Precision Tools,



L. H. Cashmen

Racine, Wis. Mr. Cashmen joined Dumore in 1942, and in addition to his new post, he will carry on his duties as assistant treasurer of the company.

Rust Engineering Co., Pittsburgh, has named S. D. Clarke, Jr., as Purchasing Agent. Prior to joining the



S. D. Clarke, Jr.

Rust staff in April, Mr. Clarke had been Purchasing Agent of Kerotest Mfg. Co., Pittsburgh, with whom he had been associated for 11 years. He is a member of the Purchasing Agents Association of Pittsburgh.

For More Information Circle No. 281 on Inquiry Card—Page 17 \rightarrow Purchasing



available in your choice of steel or iron, with or without bushings.

Our engineering services are available to aid in your solution to any lifting problem. Our catalog will gladly be sent on request.

Write us or contact your local industrial distributor.

MADESCO TACKLE BLOCK CO., EASTON, PA.



For More Information Circle No. 280 on Inquiry Card-Page 17

As a companion to its line of Type M Unibrake Motors with magnetic braking . . . Master now offers a line of Type D Unibrake Motors with dynamic braking.

HOW IT WORKS. Dynamic braking is obtained with a patented* unique, multi-polar brake winding superimposed on the stator winding of any Master single-phase or polyphase induction motor.

ADVANTAGES. Unibrake motors with dynamic braking are very compact, usually no larger than the standard motor. And since the dynamic brake has no moving parts, there is no wear . . . nothing to adjust . . . braking torque remains uniform.

ing for machinery to coast to a stop . . . get quick slow-down for machine tool spindles . . . quick turn-around

time on many operations . . . speed up auto-

matic cycling of machinery. And since Type D Unibrake Motors come to a rolling stop, they are particularly adaptable to equipment requiring gear shift between cycles.

SIZES. Now available up to 30 horsepower . . . larger ratings are being developed. Master Gearmotors and variable speed drives can also be supplied with Type D Unibrakes.

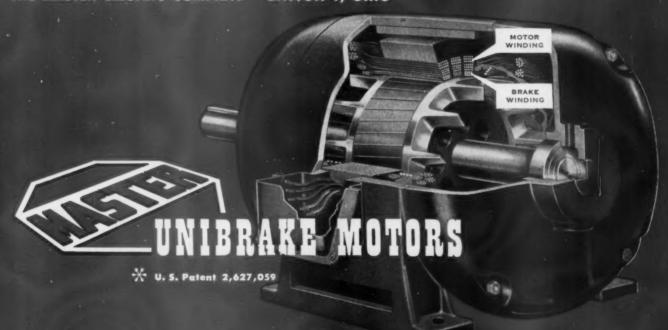
LITERATURE. For complete information write for Data 3810.

THE MASTER ELECTRIC COMPANY . DAYTON 1, OHIO



DYNAMIC BRAKING

for A-C motors



INDUSTRIAL Developments



The Cullom & Ghertner Co., Nashville, Tenn., has purchased the Esso Standard Oil Company's Baltimore printing and lithograph plant.

Production of Olin polyethylene packaging film and tubing has begun at the newly completed addition to the Pisgah Forest, N. C., plant of Ecusta Paper Corp., a subsidiary of Olin Mathieson Chemical Corp., New York.

In a move to expand its San Antonio, Texas, box manufacturing facilities, Gaylord Container Corp., St. Louis, is constructing a modern box converting plant there. When completed, about July, 1955, the one-story steel and masonry structure will replace the present plant, which is equipped for limited production only. The new plant will corrugate, print, slot and fold containers of many types.

A 75 TON Bliss Hydro-Dynamic Press has been added to the line of long stroke presses of Worcester Pressed Steel Co., Worcester, Mass. It is a single action type primarily for extruding, drawing or reducing work and has an adjustable stroke up to 60" maximum

A 16,000 sq. ft. warehouse has been completed by Quaker Rubber Corp., Division of H. K. Porter Co., Inc., Philadelphia. Constructed of prefabricated structural steel and cinder block, it doubles present factory warehouse space and includes a hose processing department as well as providing additional shipping facilities.

The Torrington Mfg. Co., Torrington, Conn., has changed the name of its Spring Machinery Division to the Wire Forming Machinery Division.

Jones & Laughlin Steel Corp., Pittsburgh, is building a new Container Division plant and office on the site of J&L's present plant in West Port Arthur, Texas. Equipment now used for producing steel drums will be moved into the new building, which will have about 38,000 sq. ft.

Borg-Warner Corp., Chicago, has extended its manufacturing operations to the West Coast. Weston Hydraulics Limited, with its plant in North Hollywood, Calif., has been acquired by Borg-Warner and will be operated as a subsidiary.

The new 40,000 sq. ft. plant of the Colson Corp., Elyria, Ohio, is nearing completion. The one-story building, of steel construction, will be 1½ miles from Colson's main factory in Elyria.

Kuhlman Electric Co., Bay City, Mich., is expanding its factory space.

The completion of a new polyester production unit at the Azusa, Calif., plant has been announced by Reichhold Chemicals, Inc., White Plains, N. Y. The unit has an estimated capacity of 10,000,000 lbs annually and provides for additional capacity.

(Please turn to page 248)



A JET AIRCRAFT... 6000 CAPACITORS AND CITIES SERVICE LUBRICANTS...



WHAT GOES INTO A CAPACITOR? Three Aerovox employees holding just a portion of the insulation and metal foil that goes into one small capacitor. After the material has been made into a roll, high vacuum pumps must remove all air and water before capacitor is impregnated with hot oils or waxes.



TWO OF AEROVOX'S VACUUM PUMPS: Water given off in high-vacuum process was problem to pump operation until Cities Service Engineer Ralph Ritchie showed Aerovox a Cities Service Pacemaker oil that really sealed bearings. Results: Continuous operation up 300%, oil consumption down 66%.

HOW DO THEY FIT TOGETHER?

There are almost 6000 capacitors in the electronic equipment of a modern jet aircraft... And it takes Cities Service Iubricants to keep production of those tiny capacitors humming, says Aerovox Corp. of New Bedford, Mass.

A JOB FOR VACUUM PUMPS—Aerovox makes literally billions of capacitors... for jet aircraft, for radio, television, and hundreds of other industries. To have the greatest amount of insulation and withstand voltage strains, capacitors must be vacuum impregnated with hot oils or waxes. This requires high-vacuum pumps... but the water involved in the process often can hamper operation.

THE NEED FOR PROPER OIL—Sealing a pump's bearings against the water from the vacuum process was a difficult problem for Aerovox until they discovered Cities Service Pacemaker Series High-Vacuum Pump Oils. Look what happened then!

OPERATION UP 300%...OIL CONSUMPTION DOWN 66%

—Continuous operation increased 300% and oil consumption was reduced 66%. Says John Stager, Aerovox Chief Engineer, "Cities Service oil has proved far superior to any other oil thus far used."

Investigate the complete, high quality Cities Service line of oils and greases for your operation.



REARFOTT ADAC servo Analog Digital Analog Analog Analog Converter

This servo driven Converter is designed to be read-out either "on the run" or "on demand". For read-out, the digital computer sends an interrogating pulse to all the drums (and their segments) in common. The pulse can only return to the computer via the brushes contacting the tracks. If a brush is on a conducting segment, the pulse returns to the computer; if the brush is on an insulated segment, the pulse is blocked. All 12 tracks are simultaneously read and the return pulses are thus coded to represent discrete

By using precision servo components, the accuracy of ADAC has been reduced to

steps of the transducer feeding ADAC.

ADAC is a device for the precise electro-mechanical conversion of analog information to digital form. ADAC works from a synchro voltage input and produces a 12-binary-digit informational output.

one part in 4096 (.02%), or approximately 5 minutes of transmitter rotation. It weighs only 2½ pounds and measures three inches in diameter and four inches in length. The device is hermetically sealed and is highly shock resistant. The T3100 Servo Amplifier provides the necessary excitation for the servo elements of the Converter. A direct drive ADAC providing the segmented drums and necessary gear trains, and an inverse ADAC for digital-analog conversion is available.

Let us send you complete data sheets. Write

KEARFOTT COMPONENTS INCLUDE:

Gyros, Servo Motors, Synchros, Servo and Magnetic Amplifiers, Tachometer Generators, Hermetic Rotary Seals, Aircraft Navigational Systems, and other high accuracy mechanical, electrical and electronic components.

Send for bulletin giving data of components of interest to you.



A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

KEARFOTT COMPANY, INC., LITTLE FALLS, N. J.

Sales and Engineering Offices: 1378 Main Avenue, Clifton, N. J.

Midwest Office: 188 W. Randolph Street, Chicago, III. South Central Office: 6115 Denton Drive, Dallas, Texas

West Coast Office: 253 N. Vinedo Avenue, Pasadena, Calif.

For More Information Circle No. 284 on Inquiry Card-Page 17

A new bonded mill depot has been opened in Rochester, N. Y., by Wolverine Tube. Division of Calumet & Hecla, Inc., Detroit. It will stock Wolverine seamless, non-ferrous, copper water tube, automotive tube and refrigerator tube.

Pressed Steel Car Co., Inc., New York, has purchased the assets of Clearing Machine Corporation, Chicago. Clearing will operate independently as a PSC division.

Sandusky Abrasive Wheel Co., recently acquired as a wholly-owned subsidiary by Ideal Industries, Inc., Sycamore, Ill., has moved its operations to Sycamore from Kalamazoo, Mich.

An 8,000 ton forging press, three stories high, and two 4,000 ton capacity forging presses are included in a major expansion program of the facilities at the Harvey Aluminum plant in Torrance, Calif. Completion of the new structures to house the presses and auxiliary equipment, is scheduled for early 1955.

The new "Mylar" polyester film plant in Circleville, Ohio, of the E. I. Du Pont de Nemours and Co., Inc., Wilmington, Del., is now in commercial production.

Clark Equipment Co., Buchanan, Mich., has acquired the inventories, engineering designs, products, tooling, trademarks, patents and certain other assets of the Torcon Corp., Ashtabula, Ohio.

Thew Shovel Co., Lorain, Ohio, has acquired the Dixie Crane & Shovel Co., Inc., Harrisburg, Pa. The Dixie Crane line will continue to be manufactured and distributed under that brand name.

Simpson Electric Co., Chicago, has purchased the complete plant facilities of O. D. Jennings & Co. The four-story acquisition contains more than 100,000 sq. ft. of modern plant space.

Edgcomb Steel Corporation, Hillside, N. J., has changed its name to Edgcomb Steel and Aluminum Corp.

The Alpha Corp., Greenwich, Conn., has moved to 65 Harvard Avenue, Stamford, Conn.

The complete production facilities of the Detroit Die Casting and Plating Co. have been purchased by Bart Mfg. Corp., Belleville, N. J.

QUICK—CONVENIENT
Use the Inquiry Card on
Page 17 for additional
information on any product

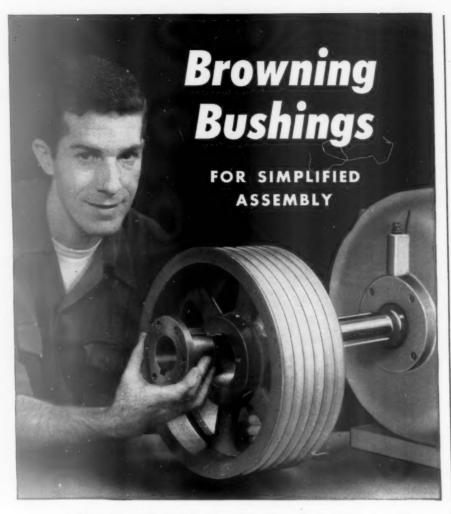
For More Information Circle No. 285 on Inquiry Card—Page 17→ PURCHASING

McLouth STAINLESS Steel

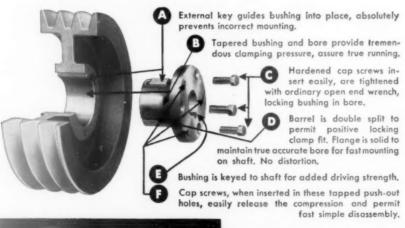
High quality stainless sheet and strip steel . . . for the product you make today and the product you plan for tomorrow.

McLouth Steel Corporation
DETROIT, MICHIGAN

Manufacturers of Stainless and Carbon Steels



Mounting and removing the Browning bushing is so easy you actually can do it blindfolded! When in place, however, this split taper compression bushing exerts powerful clamping force on the shaft, will not loosen under the most punishing loads. Made of "unbreakable" malleable iron, practically indestructible. No special tools required. Interchangeable in Browning single and multiple groove sheaves, Poly-V sheaves, roller chain sprockets, paper pulleys and rigid, flexible and chain couplings. Browning distributors offer thousands of size and bore combinations—off the shelf, ready to use. Ask for Catalog GC101.



Browning

MANUFACTURING COMPANY MAYSVILLE, KENTUCKY

For More Information Circle No. 286 on Inquiry Card-Page 17

NEWS OF YOUR SUPPLIERS

The appointment of Edwin D. Meade as manager of industrial products sales, mechanical goods division, has been



E. D. Meade

announced by United States Rubber Co., New York. He will headquarter in the firm's Fort Wayne, Ind., plant.

Thomas P. Johnson has been elected a director of **Federated Steel Corp.**, **Pittsburgh**, and its subsidiaries, The Hamilton Steel Co., Cleveland, and the Morrison Drabner Steel Co., Cincinnati.

Kier M. Boyd has been appointed director of the Product Service Division, Jones & Laughlin Steel Corp., Pittsburgh. He has been assistant manager of J&L's Order Division since 1953.



R. L. Weidman

Robert Lee Weidman has been made a technical sales representative for the Mid-Atlantic states by Cooper Alloy Foundry Co., Hillside, N. J.

Harvey A. Craig has been made manager of sales of the Bolt and Nut Division of Republic Steel Corp., Cleveland. He will headquarter in the division's offices in Cleveland.

For More Information Circle No. 285 on Inquiry Card—Page 17→

PURCHASING

GATIR can help



With assured delivery service

It's not hard to get a promise of shipping container delivery. But often there are a number of "ifs" in that promise. "Ifs" that don't exist at Gair.

"If our supply of raw materials permits, we'll be able to deliver on schedule" is one of the "ifs" you won't find at Gair. Our raw materials are grown in our own forests, processed in our own plants. We don't run short.

"If our manufacturing schedule holds up" is another qualification you won't hear from Gair.

We have *eleven plants*, equipped to fabricate whatever quantities and types of corrugated or solid fibre shipping containers you need:

"If local transportation facilities stay on schedule" is a third worry you don't have with Gair. Gair trucks provide a neighborhood service from strategically located plants.

Check your nearest Gair plant for the complete story on Gair-designed shipping containers to meet your specific needs.

GAIR CONTAINER PLANTS

Cambridge, Mass. • Cleveland, Ohio • Holyoke, Mass. • Los Angeles, Cal. • Martinsville, Va. • No. Tonawanda, N.Y. • Philadelphia, Pa. • Portland, Conn. • Richmond, Va. • Syracuse, N.Y. • Teterboro, N.J.



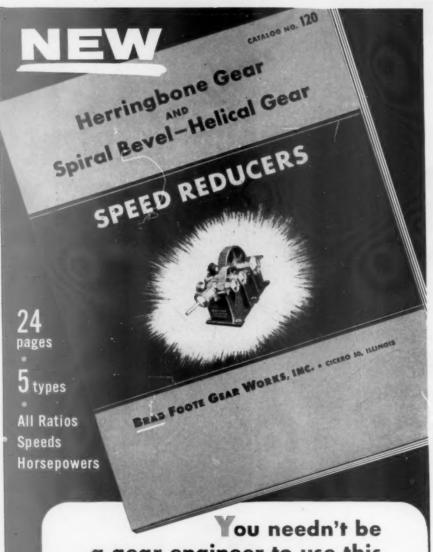


SHIPPING CONTAINERS
FOLDING CARTONS
PAPERBOARD

ROBERT GAIR COMPANY, INC. . 155 EAST 44TH STREET . NEW YORK 17

For More Information Circle No. 287 on Inquiry Card-Page 17

G



a gear engineer to use this new Reducer Catalog...

BRAD FOOTE'S new Speed Reducer Catalog is easy to use. It contains simple instructions on how to choose and how to order. It tells you what job factors to consider and the reasons why. It eliminates the "mysteries" of speed reducer selection.

 Horsepower rating tables* and dimension charts are printed in large easy-to-read type. Pages are uncrowded and easy on the eyes. Every figure and every dimension can be located quickly. Complete index speeds finding the data you need. So do the index markers at the top of each page.

In the new No. 120 Speed Reducer Catalog, BRAD FOOTE helps you choose the reducer you need from single, double or triple reduction parallel shaft, and double and triple reduction right angle types. It's as easy as A, B, C.

Write today for your free copy

*Conform to BRAD FOOTE AGMA standards GEAR WORKS, INC.

1309 South Cicero Avenue - Cicero 50, Illinois Blshop 2-1070 • Olympic 2-7700 • TWX: CIC-2856-U

subsidiaries

Phone: Lemont 920 Lemont, Illinois

AMERICAN GEAR & MFG. CO. | PITTSBURGH GEAR COMPANY Phone: SPaulding 1-4600 Pittsburgh 25, Pennsylvania

For More Information Circle No. 288 on Inquiry Card-Page 17

Ansul Chemical Co., Marinette, Wis., has established a Chicago office for its Industrial Chemicals Sales Division. The office will be headed by John R. Galloway, a chemical engineer, who was formerly with the International Latex Corp., Dover, Del.

Dumore Precision Tools, Racine, Wis., has named Lester J. LaMack as





L. J. LaMack

H. Ainsworth

sales manager, and Herb Ainsworth as district sales manager, Detroit office.

Stanley R. Venne has been named vice president in charge of all sales for Atlas Plywood Corp., Boston, Mass. He had been vice president in charge of the mid-central division with headquarters at Gladstone, Mich. He will now operate in Boston.



C. J. Mayo

C. J. Mayo has been appointed general sales manager of the Insul-8-Corporation, San Francisco.

The Electro Dynamic Division, General Dynamics Corp., Bayonne, N. J., has appointed Allan B. Collins as district manager in Kansas City, Mo.

Frank Barilla, formerly sales engineer in Milwaukee for The Parker Appliance Co., Cleveland, has been promoted to district manager of Wisconsin and Minnesota for the Tube and Hose Fitting Division and the Industrial Hydraulics Division of Parker.

The Gilbert Paper Co., Menasha, Wis., has appointed Randall H. Decker, Jr., a representative in its eastern territory. He will headquarter in the firm's New York office.



It's always a good spring

WHEN YOU USE BRIDGEPORT PHOSPHOR BRONZE

In any season, electrical parts made from Bridgeport Phosphor Bronze (Alloys 35 and 36) retain their resiliency and high flexural strength, year after year. They also resist corrosion and wear due to the inherent characteristics of these Bridgeport Alloys, and their excellent electrical properties help improve the operating efficiency of the parts.

To use the advantages of Bridgeport Phosphor Bronze for your parts, and for prompt service on your metal needs, call your nearest Bridgeport Sales Office.

• One of the many Bridgeport Metals with High I.Q. (Inner Quality) for economical fabrication and improved products.

BRIDGEPORT BRASS

COMPANY . BRIDGEPORT, CONNECTICUT

Serving Industry With a Nationwide Network of Conveniently
Located Sales Offices and Warehouses



Mills at Bridgeport, Conn., Indianapolis, Ind., and Adrian, Mich.
In Canada: Noranda Copper and Brass Limited, Montreal



GE makes them all

YOU draw the Shape... PAGE will draw the Wire

Cross-sectional areas up to .250" square; widths up to %"; width-to-thickness ratio not to exceed 6 to 1.

Tell us the way you want it. We'll follow your specifications.

Write or wire today

Page Steel and Wire Division

AMERICAN CHAIN & CABLE

plus
Welding
Electrodes
Wires
Rods



For More Information Circle No. 290 on Inquiry Card-Page 17

Association News

(Continued from page 232)

St. Louis Meeting Features Talk "Legally Speaking"

Members of the Purchasing Agents Association of St. Louis met in the Missouri Room of the Hotel Statler on October 26. Featured speaker was Mr. Northcutt Coil, a St. Louis attorney. Mr. Coil's topic was "Legally Speaking." He presented a wealth of information applicable to general legal problems encountered by members in their day-to-day buying operations.

Prior to the dinner meeting, there was an educational forum on "Purchase Forms and Procedures." Experts on hand included D. C. Kling of Moore Business Forms, Niagara Falls, N. Y. and William Reed, manager of Remington Rand's St. Louis branch.

New members recently welcomed to the St. Louis Association include: C. F. Hellweg, Moloney Electric Co.; Peter E. Kissgen, Falstaff Brewing Corp.; Robert W. Bardgett, Bardgett Printing & Publishing Co.; Dale E. Hood, G. S. Suppiger Co.; and K. W. Guillermin, Marlo Coil Co.

Lancaster Club Meets

First fall meeting of the Purchasing Agents' Club of the Manufacturers' Association of Lancaster, Pa. was held on October 19 at the Lancaster County Riding Club. After a pot roast dinner, members learned about the "Business Outlook for 1955." The speaker was Mr. Charles Reeder, economist for the Armstrong Cork Co.

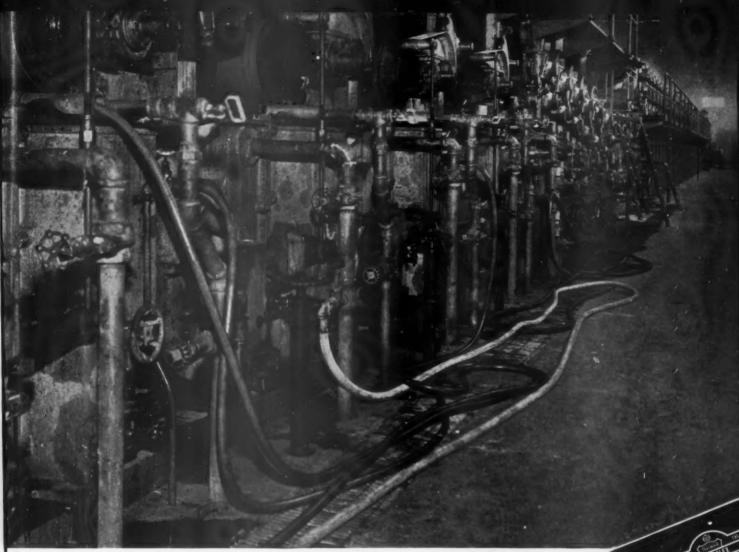
Pittsburgh Plant Visit

The October meeting of the Purchasing Agents Association of Pittsburgh featured both a plant visit and a closed dinner meeting. The day started off at 12:30 when, box lunches in laps, PA's left in buses for the Ford City Plant of the Pittsburgh Plate Glass Co. They enjoyed a very interesting and educational tour of this modern glassmaking facility. Later, following dinner, a panel discussion was held after a showing of the film "Industrial Purchasing." Serving as moderator was Bruce Henderson, vice president purchasing, Westinghouse Electric Corp. A spirited discussion followed on the role purchasing can and should play with management.

For More Information Circle No. 291 on Inquiry Card—Page 17→

PURCHASING

ACCO



Thermoid Hose Versatility Cuts Your Costs

The versatility of Thermoid multi-purpose hose makes stocks of many different types unnecessary. You cut your hose cost through reduced inventories, simplified buying and less storage space. Losses from end remnants are greatly reduced.

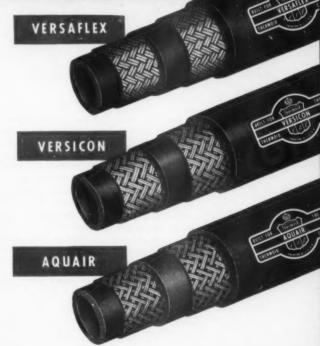
VERSAFIEX—Excellent for handling air, water or oil under high pressure. Use also for butane, propane and as fire fighting booster hose. Red cover.

VERSICON — Most versatile hose ever offered. Handles air, water, oils, greases, gases and dilute acids. A real inventory-saver! Brown cover.

AQUAIR—Handles air, water, gases where oil is not present. Ideal for oxygen and acetylene welding operations. Tough, yet light and flexible. Green cover.

In addition, Thermoid makes other types of hose for specific applications, such as paint spray, sand blast, dust collecting, etc. Call your Thermoid Distributor. He can help you select the hose best suited for your requirements. Or write direct for our latest catalogs.

Your Thermoid Distributor also carries a complete line of Thermoid Conveyor Belting and Multi-V Belts to meet all your requirements.



Conveyor & Elevator Belting • Transmission Belting F.H.P. & Multiple V-Belts • Wrapped & Molded Hose



Rubber Sheet Packings • Molded Products Industrial Brake Linings and Friction Materials



Long life, trouble-free performance, low upkeep record—that is the true measure of gear cost. Using those factors as a means of comparison, PERKINS GEARS cannot be surpassed. As a result, you will find PERKINS PRECISION GEARS in the power transmission systems of the finest products made by industry throughout the United States.

As one of the country's leading gear engineering organizations—solidly backed by a tradition of New England craftsmanship, we are able to produce—to your specifications—any size gear, in any material and in any quantity. Ask us to quote on your requirements.

PERKINS MAKES: helical gears, bevel gears, sprockets, ratchets, worm gears, spiral gears, spur gears with shaved or ground teeth, ground thread worms.

NOTE: The PERKINS PRECISION SPRING COILER is the latest dovelopment in the spring coiler field and eliminates entirely the use of arbors and long set-up time. It is a complete self-sufficient machine and enables you to make the spring you want when you want it—in seconds. The coiler produces any type of sprina, in any diameter and any pitch with this range: Wire sizes .005 to .125. Diameter, from 3/32" to 12" condiarger. Size of the compact coiler is only 7½x16". A POWER MODEL mounted on a welded steel console base is also available. Full information on request.

PERKINS Machine & Gear Co. WEST SPRINGFIELD, MASSACHUSETTS

For More Information Circle No. 282 on Inquiry Card-Page 17

Second Toledo Serv-A-Show Big Success

Reader's Digest for November defines a committee: "A group of the unfit, appointed by the unwilling to do the unnecessary." The definition is funny, but it's wrong. That it is wrong was ably demonstrated by the 1954 SERV-A-SHOW committee of the Toledo Purchasing Agents' Association.

With only one year's precedent in putting on the SERV-A-SHOW on a really big scale to guide it, the committee achieved an industrial show that was large, diversified, and satisfying not only to the throngs of viewers, but to the exhibitors themselves. The fact that over half of the booths for next year's show were sold before this year's show was over is adequate testimony that everyone was happy with the production.

A cocktail hour and dinner for the exhibitors, members of the Toledo Purchasing Agents' Association and their guests opened the show at the Toledo Civic Auditorium Wednesday October 13. Following the dinner the Toledo Association was afforded a pre-view of the SERV-A-SHOW; it was opened to the public Thursday, Friday and Saturday.

Chairman of the Committee for this year's very successful show was Ollie LaVallee, who was everywhere at once, and who covered personally the most minute details attendant upon putting on a good show. Member's of Ollie's Committee were: Jim Raifsnyder, Scotty Richardson, Chuck Thompson, Bill Dunn, Max Thayer, Norm Earley, Frank Sayre, Joe Mack, Bob Wiskochil, Ken Roepke, Vic Miller and Charley Wyatt. Solo Star of the Committee was the indefatigable Ken Roepke, who sold over twenty booths.

Immediately following the show's successful close, the Committee met to discuss better methods of assembling the show and to lay plans for an even better and bigger one for the next year.

Attending the 1954 Sixth District Council Meeting at the Biltmore Hotel in Dayton on Saturday, October 23 were President Bob Wiskochil, National Director Frank Sayre, First Vice-President Max Thayer, Second Vice-President Vic Miller, Scotty Richardson and former National Director Norm Earley. At the council meeting George H. Porter, III, made favorable mention of the ambitious program in public rela-

(Please turn to page 260)

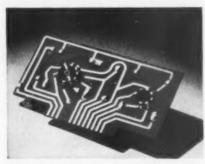
Get better printed circuits...lower costs...fewer rejects

WITH NEW C-D-F METAL CLADS

All manufacturers of metal clad stock for printed circuitry have made considerable progress in improving their product—a material with a metal foil surface bonded to a nonconducting base. How this has been done by one leading manufacturer, the Continental-Diamond Fibre Company, illustrates some of the problems involved in buying this type of material and in understanding its design potentials.

C-D-F CONSOLIDATED GRADES

At first, small test lots of Dilecto laminated plastic with copper surfaces were made. Almost every core material was used. Finally the number of practical grades for printed circuit work narrowed down to these few grades which retained to a large degree the inherent electrical qualities of their base material and resin at high temperatures:



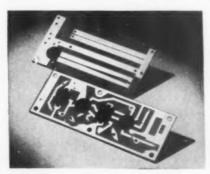
COPPER CLAD GRADE XXXP-26

A laminate with excellent electrical and mechanical properties. High moisture resistance and dimensional stability. Recommended for applications where

high heat and high insulation resistance plus low dielectric loss under high humidity is needed. Low cold flow characteristics. Can be hot punched to ½". Good flexural strength. Natural green color.

This is one of the *improved C-D-F Dilecto laminates*. Advances in resins and manufacturing techniques makes this grade almost homogeneous, with improved impregnation of the filler. Thorough impregnation eliminates entrapped moisture and air, giving greater moisture resistance and better dielectric properties.

Any metal clad is no better than its base and the care taken in laminating. With the cost of material high, compared to labor and inspection, the purchase of a *uniform* metal clad material, like this C-D-F grade, becomes vital.



COPPER CLAD GRADE XXXP-24

Similar to grade XXXP-26 in electrical and moisture resistance properties, but not quite as strong mechanically. Equal cold flow and punching characteristics. Natural brown.

COPPER CLAD GRADES GB-112S AND GB-261S

These silicone grades use a glass fabric laminate with a copper foil surface on one or both sides. Recommended where high heat resistance and low dielectric loss properties are required. For certain tuners and inductances the

low dielectric loss factor of this grade makes its higher cost acceptable. A continuous filament (Grade GB-112S) is used for thicknesses 1/32 to 1/16". A staple filament (Grade GB-261S) is used for thicknesses over 1/16".

COPPER CLAD GRADE GB-116T

A glass base laminate using duPont's tetrafluoroethylene resin, Teflon, for outstanding resistance to high heat with extremely low dielectric loss properties. A fine weave continuous filament glass fabric cloth is used for superior mechanical strength and good machining qualities. In spite of its high cost, this C-D-F grade has demonstrated that it can save money and do a job that no other single material can in microstrip high-voltage, high-frequency circuit elements. Remember, C-D-F is a major supplier of sheets, tapes, rods, tubes of Teflon, has valuable experience in its manufacture and fabrication. Write for samples.

C-D-F INCREASED BOND STRENGTH

By developing a special thermo-setting adhesive particularly suited for metal clads, C-D-F was able to increase the bond strength of their laminates considerably above their original figures. Bond or peel strength, the amount of pull required to separate the foil from the core material, is one of the most important physical properties. Therefore, the purchaser should compare his source of supply with these C-D-F average test values:

BONDING STRENGTH-FOIL TO LAMINATE

MATERIAL	Average or Typical Value Lbs. pull per 1" width of foil to separate
XXXP-24 or XXXP-26 plus 0.0014" copper XXXP-24 or XXXP-26 plus 0.0028" copper GB-116T plus 0.0014" copper GB-112S plus 0.0014" copper GB-261S plus 0.0014" copper	5 to 8 7 to 9 5 to 12 6 to 8 7 to 10
GB-261S plus 0.0014" copper These values are based on tests at prevailing ro	

C-D-F INCREASED HEAT RESISTANCE

Special efforts by C-D-F technicians to increase the heat resistance of all C-D-F Metal Clads have resulted in certain special grade variations able to withstand higher soldering temperatures without damage. As production methods change, C-D-F offers materials to meet your requirements.

NOW . . . HOW ABOUT YOUR STORY?

Notice how we have talked about C-D-F and what we have done to improve quality and uniformity of metal clad products. Much of this has been accomplished with the guidance and cooperation of leading users of printed circuit stock. No one company knows all the answers . . . but C-D-F, a big reliable source of supply, can help you get better printed circuits . . . lower costs . . . fewer rejects. Look up the address of your nearest C-D-F sales engineer in Sweets Design File, write us for samples you can test in the lab and on the production line, technical bulletins, help on your specific project. We want to work with you!



CONTINENTAL-DIAMOND FIBRE COMPANY
NEWARK 41, DELAWARE

(Advertisement)



Better because ... They are pressure sealed with an insoluble lubricant readily renewed while the valve is in service. Lubricant completely surrounds the plug ports assuring a tight seal against leaks. It also insures ease of operation by reducing friction between the body and the plug while at the same time protecting the finished surfaces against corrosion and wear.

Walworth Lubricated Plug Valves are the most satisfactory valves available for the handling of gritty suspensions, and many other destructive, erosive, and corrosive industrial and chemical solutions.

They are ideal for general refinery and pipeline service.

For full information see your Walworth Distributor, or write for your copy of Bulletin 111. Walworth Company, General Offices, 60 East 42nd Street, New York 17, N. Y.



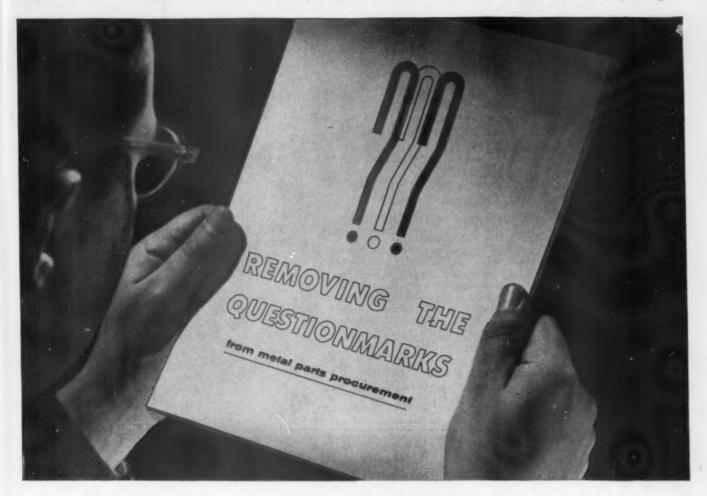
Lubricant system of a Walworth No. 1700F Regular Gland, Wrench Operated, Steel-iron, Lubricated Plug Valve. Other Walworth Lubricated Plug Valves include Single Gland, and Ball Bearing types. Sizes to 30-inches - pressures to 5,000 psi, and for vacuum service.

WALWORTH

valves . . . pipe fittings . . . pipe wrenches 60 East 42nd Street, New York 17, N. Y.

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

specific ways to increase profits thru metal stampings



here's a clear cut report on what Crosby can do for you

Are you faced with rising costs and stiffer competition? How certain are you that your metal parts embody all possible improvements and economies?

"Removing the Questionmarks" will tell you how The Crosby Company is staffed and equipped to help you solve numerous problems in the procurement of metal parts. It shows how this progressive Company can assist both large and small plants in the design and production of cost-saving, product-improving, metal stampings.

It defines the many ways in which Crosby shows its initiative by making suggestions and recommendations when quoting. It explains how estimates are carefully prepared and how delivery dates are made to be kept.

It will enable you to measure the true value of Crosby services in meeting your parts requirements.

Make sure that this informative report reaches your desk without delay by using the coupon below.



GET A CROSBY
ENGINEERED QUOTE

THE	CROSBY	CO.	209	Pratt Stree	t. Buffalo	4. N.	Y.

Mail a copy of your report "Removing the Questionmarks from Metal Parts Procurement" without cost or obligation.

Name ______Title _____

Company

SALES OFFICES: Buffalo . Cleveland . Detroit . Chicago . New York . Philadelphia

For More Information Circle No. 294 on Inquiry Card-Page 17



now size-marked for easy identification



Your Hallowell distributor now stocks these size-marked precision machined solid steel collars in sizes to fit shafts from \%6" to 3" inclusive. And positive positioning of every Hallowell Collar is assured by the famous self-locking Unbrako Socket Set Screw—the

screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

HALLOWELL POWER TRANSMISSION DIVISION

SPS JENKINTOWN PENNSYLVANI

For More Information Circle No. 295 on Inquiry Card-Page 17



For More Information Circle No. 296 on Inquiry Card—Page 17



SUPER-Harbord fir plywood and Harborite plastic-faced plywood are made with extreme care. Only Harbor's special waterproof, boil-proof, freezeproof glue is used. In addition:

- 1. Only prime heartwood used, no sapwood.
- 2. Inner plys machine-edged and butted.
- 3. All solid wood core-no gaps.
- 4. Rehumidified for dimensional stability.

SUPER Harbord and Harborite

HARBOR PLYWOOD CORPORATION

ABERDEEN WASHINGTON
Sales Offices and Warehouses in Aberdeen, Atlanta, Chicago, Cincinnati, Indianapolis, Jacksoaville, Los Angeles, Oakland, San Prancisco,
Tampa, Seattle.

For More Information Circle No. 297 on Inquiry Card—Page 17 (Continued from page 256)

tions undertaken by the Toledo Association in underwriting the Paul Mermer Course, "Clinic in Human Relations." Point was given to Mr. Porter's remarks by his being made Sixth District Chairman on Public Relations.

President Bob Wiskochil, who originally advocated the Toledo Association's sponsoring of the Paul Mermer "Clinic in Human Relations," was gratifyingly surprised by the overwhelming response to this two-night, six-hour course in human engineering. Held at the Toledo Yacht Club Monday and Tuesday, October 25 and 26, the turn-out of association members and associates of their companies more than justified Bob's confidence in the course.

Buffalo Ass'n Holds Past Presidents Nite

Past presidents were honored at the November meeting of the Purchasing Agents Association of Buffalo. Featured speaker at the meeting was Mr. Fred A. Manske, vice president in charge of operations, National Gypsum Co. Mr. Manske spoke on "The Construction Industry." In addition, the movie "White Magic" dealing with gypsum was shown.

A large group of Buffalo PA's were guests of the Rochester Association at their November meeting. They heard an interesting talk by NAPA Executive Secretary-Treasurer George A. Renard.

New members of the Buffalo group include: Donald E. Whelan, Pittsburgh Metallurgical Co.; James E. Shannahan, Pivot Punch & Die Corp.; and Leonard J. Chisholm, Curtis Screw Co.

f f f Central lowa Ass'n Meets

Guest speaker at the November meeting of the Purchasing Agents Association of Central Iowa was Mr. Bill Gove. Mr. Gove, a top flight salesman gave PA's many good ideas on the subject of selling. PA's, even though they sell no product, must still sell themselves and their function to management and their business associates.

At the October meeting, members learned about the new wonder metal, titanium. Featured speaker was R. S. Nycum of Titanium Pigment Corp. Mr. Nycum's topic was "The Story of Titanium Metals." He described,

(Please turn to page 266)

IT PAYS TO SEE VICTOR

SHIPPING

VICTOR

A Mariable Name in hemicals

for 50 Years



ENVELOPE TO CARRY THE LOAD

New roads last longer and cost less when the subgrade is protected against water damage by a "waterproof envelope". This is no ordinary envelope . . . it's made with a special asphalt . . . catalytic asphalt containing Victor phosphoric anhydride (P₂O₅). It waterproofs the subgrade . . . lasts indefinitely . . . permits use of lower-cost materials . . . helps prevent heaving and cracking of the road-bed. In addition, catalytic asphalt is being used successfully for irrigation canals, airstrips and repairing concrete roads. It pays to see Victor.

PHOSPHORIC ANHYDRIDE—Typical uses: Drying agent, condensing agent. Manufacture of resins, organic phosphates, and catalytic asphalt.



A DRY SUBJECT

Dry powder bleaches have been developed recently. These bleaches can be used safely with synthetic fibers and at the same time effectively bleach cottons. And, because these bleaches are in powdered form, they're easier to package . . . without danger of breakage. Victor "tripoly" in powdered bleaches does a dual job . . . it acts as a water-softening agent and also maintains alkalinity for bleaching efficiency. It pays to see Victor.

SODIUM TRIPOLYPHOSPHATE—Typical Uses: Soap builder, manufacture of detergents and water softeners, purification of china clay, deflocculant in row cement slurries, conditioning of oil drilling muds, anti-pitch agent in paper making.



A SHINE IN NO TIME

It's not easy to put a shine on ornate and intricate metal objects by hand-buffing. It is costly, and often unsatisfactory. Now, however, many metals are given a beautiful polish quickly and at low cost with a bath containing Victor phosphoric acid. Chemical or electropolishing baths containing phosphoric acid are fast replacing mechanical buffing for finished products made of stainless steel, aluminum, copper, brass and other metals. If you polish a metal product, it pays to see Victor.

PHOSPHORIC ACID—Typical uses: Manufacture of yeast, sugar, soft drinks, gelatin and pharmaceuticals. Rust-proofing, chemical polishing, petroleum refining. Manufacture of phosphates, glue, ceramics, metal-treating compounds, and fertilizers.



IT TAKES THE CAKE!

Today's cakes, muffins, waffles, and biscuits are easily made by adding liquid to the contents of a box of mix. Mix experts know that the right kind of leavening is important to safeguard shelf life and for uniform kitchen performance. That's why mix makers turn to Victor for the selection of leavening materials tailored to the delicate balance of their brands. Homemakers get uniformly high, light, and handsome cakes, manufacturers gain repeat sales. If you have a leavening problem, consult phosphate headquarters. You'll find *it pays* to see Victor.

SODIUM ACID PYROPHOSPHATE—Typical Uses: Baking acid for doughnut flours, prepared flours. Manufacture of commercial baking powders, and baking creams. Conditioning oil well drilling muds. Acid type metal cleaner.



"SWEET" FINISH FROM "SOUR" START

Victor oxalic acid is helping many laundries deliver sweeter, cleaner, whiter washes. Since laundry soaps are alkaline, oxalic acid is added to "sour" or neutralize the rinse water, discharge the bleach, or to remove iron stains. This produces better results for the laundry . . . greater satisfaction for the customers. It pays to see Victor.

OXALIC ACID—Typical Uses: Radiator cleaning compounds, leather processing, bleaching, laundry sour, washing coal, removing rust stains from marble. Manufacture of metal polishes, blue-prints, dyes, and blueing.



TAILOR-MADE TO BOOT!

Natural raw rubber has many advantages ... but man-made synthetic rubber has even more. Originally a war-born substitute, synthetic rubber has proved to be more than a match for nature. Even sporting goods, made with synthetic rubber can be tailor-made for a specific job. In addition, synthetic rubber offers properties of acid-resistance, heat-resistance . . . performance that natural rubber cannot match. Victor formic acid and potassium phosphates are used as chemical intermediates in synthetic rubber production. Another instance where it pays to see Victor.

POTASSIUM PHOSPHATES—Typical Uses: Yeast foods, plant nutrient solutions, medicinals, fermentation processes, builder and clarifier of liquid soaps, dyeing compounds, fluxing agent, and defloculating agent.

IT PAYS TO SEE ...

VICTOR

hemicals

VICTOR CHEMICAL WORKS
141 West Juckson Boulevard, Chicago 4, Illinois

plants and offices of VICTOR CHEMICAL WORKS

Chicago, III.

Chicago, III.

Chicago Heights, III.

Kansas City, Mo.

Mount Pleasant, Tenn.

* Nashville, Tenn.

Victor, Fla.

Plants

if TEXTILES are your special interest be sure to see the next page

METOR

goes through

Textile mill; that is,

Victor supplies many of the chemicals needed in modern textile processing. For example, Victor formic acid has long been preferred as an acidifying and exhausting agent in leading dyeing and finishing plants. Makers of synthetic fibers rely on Victor for surface-active agents for package dyeing of nylon. Ammonium phosphates aid in chrome dyeing wool and flameproofing fabrics.

Now, Victor has another "extra" for the textile industry. "Carrier spotting", a former hazard of one-bath Dacronworsted union dyeing, has been eliminated through use of Victor diammonium phosphate as the regenerating agent. Mills that formerly stock-dyed blends can now hold them in "grey goods" form and dye them quickly to meet changing shade requirements. It pays to see Victor.

VICTOR SERVES

THE TEXTILE INDUSTRY

OXALIC ACID—bleaching . . . DIAMMONIUM PHOSPHATE—flameproofing, buffer for chrome dyeing of wool, one-bath dyeing of Dacron-wool blends . . . SODIUM PHOSPHATES—buffers in dye baths, synthetic detergents, dyeing, water treatment, stabilization of hydrogen peroxide baths, wool scouring . . VICTAWETS® wetting agents, dye carriers, penetrants . . FORMIC ACID—dyeing . . FYREX® compounds—flame-proofing . . . VICTAMINE D—Textile softening agent . . . ALUMINUM FORMATE—waterproofing.



This is a plain Ruff-L-Buff after wearing off about one inch in testing operations and then trimming. Loose threads, broken material and numerous small holes due to excessive heat and abrasion of the cloth are apparent.



3/10

LONGER BUFF LIFE

The Binderized Ruff-L-Buff shown here was subjected to the identical test undergone by the untreated buff — yet look at the difference! Notice the absence of thread or cloth breakage of any kind, proof of Binderizing's effect on buff life.



with New H-VW-M Binderized* Ruff-L-Buffs®

Not just "another type of buff", but a revolutionary new H-VW-M process which impregnates the entire Ruff-L-Buff with the same organic binder used in buffing compounds. From these new "Binderized" Ruff-L-Buffs come a host of practical, cost-cutting advantages, proved over many months in actual production line operations.

Item by item, these are the six major advantages of the H-VW-M Binderized Ruff-L-Buff.

- Longer buff life damage from overheating eliminated by pre-lubrication of buffing material, preventing excess frictional heat caused by constant flexing. This additional buff life has averaged 30% in actual test runs.
- Better compound adherence the binderizing impregnation creates an affinity between buff and compound. The compound does the cutting, not the buff.
- Faster cutting action more compound is retained on the buff, insuring an even cut for a longer period without re-application of compound.
- Extended composition life additional binder in the cloth ensures better abrasive adhesion, longer life of both composition and buff.

- Heading-up time new wheels require only application of the compound to be ready for immediate operation.
- Cooler running in addition to pre-lubrication, six holes in the center and twelve air channels in the center rim provide a forced air circulation over all cloth surfaces.**

And, of course, Binderized Ruff-L-Buff retain such important features as bias-cut cloth to prevent unravelling, perfect buff balance for uniform rotation and wear, and exclusive Red-E-To-Use face that takes compound without need for surface preparation.

H-VW-M bias-cut Sisalweev buffing wheels are also available in Binderized types.

- * Patent Pending
- ** Patent No. 2,140,208

For complete information on H-VW-M Binderized Ruff-L-Buffs and other specialized buffs write for Bulletin No. B-102.





Your H-VW-M combination of the most modern testing and development laboratory —of over 80 years experience in every phase of plating and polishing — of a complete equipment, process and supply line for every need. HANSON-VAN WINKLE-MUNNING CO., MATAWAN, N. J.

Plants: Matawan, N. J. • Anderson, Ind. • Grand Rapids, Mich. SALES OFFICES: ANDERSON • BALTIMORE • BOSTON • CHICAGO CLEVELAND • DAYTON • DETROIT • GRAND RAPIDS LOS ANGELES • LOUISVILLE • MATAWAN • MILWAUKEE NEW YORK • PHILADELPHIA • PITTSBURGH • ROCHESTER SAN FRANCISCO • SPRINGFIELD (MASS.) • ST. LOUIS STRATFORD (CONN.) • UTICA • WALLINGFORD (CONN.)



A 121

INDUSTRY'S WORKSHOP FOR THE FINEST IN PLATING AND POLISHING PROCESSES • EQUIPMENT • SUPPLIES

For More Information Circle No. 299 on Inquiry Card-Page 17



For More Information Circle No. 300 on Inquiry Card-Page 17

(Continued from page 260) with the aid of slides, various steps in the production of titanium, and also discussed some of the metal's uses.

New members welcomed to the Association are: Warren C. Strober, Delavan Manufacturing Co.; Martin A. Cook, Titus Manufacturing Co.; Fred Bernhard, James M. Pierce Corp.; E. N. Miller, Industrial Supply Co.; O. V. Steil, Iowa State College; and D. H. Osterman, Iowa State College.

Chicago Association

The Bal Tabarin in the Hotel Sherman was the scene of the October meeting of the Purchasing Agents Association of Chicago. Speaker of the evening was Mr. Stuart F. Heinritz, editor of Purchasing. Mr. Heinritz's topic was "This Changing Business of Buying."

Philadelphia Ass'n Holds Class on Management Relations

LI

ala

en

ph

po

ou

in

se

Sic

al

pi

gi

"Until management realizes that employees are infinitely more complicated than the machines they operate, maximum cooperation and working efficiency will seldom be achieved," a gathering of Philadelphia purchasing agents was told. Alfred B. Howe, manager of office operations at Smith, Kline & French Laboratories, made this statement in a talk outlining his firm's philosophy on developing intra-company coordination and teamwork. He was guest speaker at a dinner meeting and special class in management relations and administration problems held by the Philadelphia Association of Purchasing Agents at the Warwick Hotel.

Observing that while in many companies there is great emphasis placed upon mechanical development, machine maintenance, strict inventories, and formulas for getting the best results with raw materials, Mr. Howe said too little attention is given to bringing out the best in the people who are assigned these jobs.

"The employee must be made to to feel that his present job is important in itself and he must be able to derive from it satisfactions specially built into the job by his supervisor. In other words, the job should be more than a stepping stone or a rung on the ladder. It should provide the employee with ample opportunity to exercise in-

(Please turn to page 268)

100% DC POWER RELIABILITY

...year after year for Philadelphia's Fire Alarm System

with

Federal

SELENIUM RECTIFIER POWER SUPPLIES

LIVES ... property ... security ... all depend on the *reliability* of the DC power that transmits fire alarm signals!

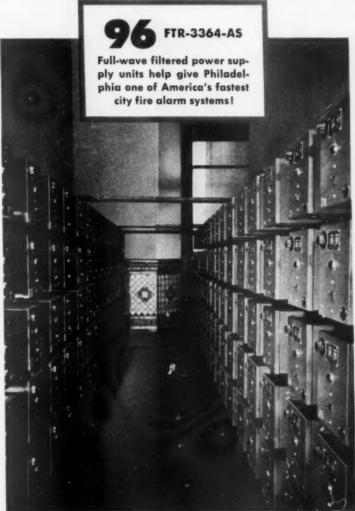
"That's why," says Frank Schierff, Superintendent of Communication System, City of Philadelphia, "we put our trust in Federal selenium rectifier power supplies. In five years of continuous service our Federal installation has never faltered for an instant."

Here's further proof that Federal's compact selenium rectifiers are the efficient and economical way to get DC from AC... for all power conversion needs.

Federal selenium rectifier power supplies virtually eliminate wear, maintenance and replacement problems common to other devices. They are engineered to deliver maximum reliability at minimum cost!



Patching-in power supply to test alarm circuit by measuring current. 2-way meters avoid polarity problems in patch wiring.



Philadelphia's Fire Alarm Power Room

-controls 2800 fire alarm boxes and 105 equipment stations, divided among 87 circuits, each served by one FTR-3364-AS full-wave filtered power supply. Nine standby units are kept in operation . . . ready to be patched into any circuit if required. Here, maintenance is limited to an occasional dusting and checking of pilot bulbs. This type of DC power supply equipment meets the standards of the National Board of Fire Underwriters.

For complete information, write Dept. E.934



Federal Telephone and Radio Company

A Division of INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

COMPONENTS DIVISION 100 KINGSLAND ROAD CLIFTON, N. J.

In Canada: Federal Electric Manufacturing Company, Ltd., Montreal, P. Q. Export Distributors: International Standard Electric Corp., 67 Broad St., N. Y.

For More Information Circle No. 301 on Inquiry Card-Page 17

Specify
BATTERY
CHARGERS
by Federal
For long life and
dependable service

IT'S NEW?



Newest addition to MILLERS FALLS famous line of cost-cutting tools for industry

This rugged, high-production tool cuts sheet metal — up to 16 gauge (.060") in steel and galvanized sheet — up to 50% greater in aluminum, copper and other non-ferrous metals. Blade adjustments for different jobs are quickly made — with hex keys conveniently located in tool handle.

In power, in quality, in design, the new No. 16 Portable Electric Shear is an outstanding addition to Millers Falls line of electric tools for production and maintenance... including drills, high-speed die grinders, heavy-duty grinders, saws, hammers, sanders, polishers, screw drivers and nut runners.

Compare the features

Write for free literature on the new Millers Falls
Shear, on Millers Falls complete selection of
high-performance, advanced-design electric tools.
Demonstrations will be quickly arranged on
request.

MILLERS FALLS COMPANY Dept. PR-5, Greenfield, Mass.



On straight lines or curves, from inside or outside, Millers Falls new No. 16 Portable Electric Shear cuts clean and fast. Light weight — only 8 lbs. Minimum radius for left hand cuts is $\frac{1}{2}$, for right hand cuts, $\frac{1}{4}$. High cutting-line visibility. Precision-ground, heat-treated alloy steel blades are quickly removed for resharpening. Built to Millers Falls quality standards, the No. 16 Portable Electric Shear is the latest star in a notable line of industrial electric tools.



(Continued from page 266)

itiative and to make a reasonable number of decisions by himself," Howe stated.

New Jersey Ass'n Growing

In a single month, applications for membership in the newly formed Purchasing Agents Association of New Jersey have grown to 118. Attendance at the group's second meeting on November 10 indicated that further growth in membership was likely. To date most new members have been PA's who had not heretofore enjoyed the benefits of membership in a purchasing professional group.

The second meeting started off with a round table discussion on "How to Handle Small Orders." This is a vexing problem encountered by every PA and many good ideas how to deal with it most efficiently emerged from the discussion. At the dinner meeting, the guest speaker was Stuart F. Heinritz, editor of Purchasing. Mr. Heinritz spoke on "The Changing Business of Purchasing."

of Purchasing."

Appointment of committee chairmen has been announced by the new association. Chairmen include: educational, B. N. Karpson, Federal Telephone & Radio Co.; forum, F. Curran, S. Blickman, Inc.; outside activities, J. C. Mickens, Scandia Manufacturing Co.; program, L. C. Mercier, Federal Telecommunica-

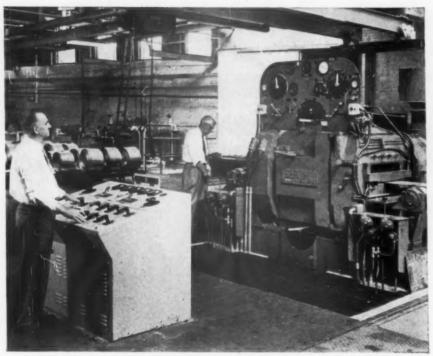
Mercier, Federal Telecommunications Labs.; member participation, R. B. Walworth, Air Associates Inc.; membership, H. P. Sommerer, Federal Telephone & Radio Co.; dinner, A. Kraus, Hatfield Wire & Cable Div.; reception, R. D. Hartsig, Westinghouse Electric Corp.; eligibility,

W. P. Selby, Sonoco Products Co.

In the story on the New Jersey group in the November issue of Purchasing, it was stated that "A new NAPA chapter was born on October 6." This is not correct. As yet the New Jersey group is not affiliated with NAPA. However, it is in the process of requesting affiliation in accordance with NAPA regulations. At the 8th District Conference, application was made to NAPA 8th District Vice President Frank Whyte. Mr. Whyte, in turn, appointed a committee consisting of E. M. Krech, M. MacBurney, and Fred Esser to make certain that the new organization conforms to NAPA requirements. After approval by this committee, the application for affiliation must be approved by the District Council and the NAPA National Executive Committee.

\$2,000,000 says that Seymour is 76 years young!

Yes, we are spending another two million! On the floor of the plant it will be "new equipment." But in our thinking it is that alertness to progress which has put Seymour out front in quality and service. Now old in experience, we have long known that it pays to stay young in action.



Control Console and Main Works of Sendzimir Reversing Cold Strip Mill

This Is What It Means To Our Customers

The new Sendzimir Reversing Cold Strip Mill provides maximum rolling without annealing, high luster on the finished strip, improved surface quality and closer control on gauge tolerances and edge-to-edge variation.

This Mill will be augmented by a large fast slitter for extremely rapid production. Also, a Rockwell Continuous Strip and Sheet Pickling Line, permitting almost uninterrupted pickling at high speeds of a wide range of widths and gauges, will assure nearly unbroken operation on long runs of metal. This, in conjunction with the Sendzimir Mill, plus new control atmosphere annealing furnaces, will not only improve the time cycle of manufacturing, but will make possible finished metal with a cleaner, brighter and more perfect surface than has been possible in the past.

We appreciate the endorsement of the thousands of manufacturers who rely on Seymour Nonferrous Alloys. In accord with "enlightened self-interest," we are planning always to keep ahead in technology and production facilities — to deserve your continued confidence.

NONFERROUS ALLOYS

THE SEYMOUR MANUFACTURING COMPANY, SEYMOUR, CONN.

NICKEL SILVER • PHOSPHOR BRONZE • BRASS
- NICKEL ANODES AND BRIGHT NICKEL

SEYMOUR





Here's Power Products Corporation's popular 2-cycle engine that delivers 2 horsepower.

How much would you guess it weighs? Fifty pounds? Thirty? Twenty? Guess any of these and you'd be wrong. It weighs just sixteen pounds.

This remarkable power to weight ratio is made possible, in a large measure, through the use of ball bearings at both ends of the crankshaft. Power Products engineers, like many others, recognized the inherent advantages of the 2-cycle principle—lightweight and compactness. The use of ball bearings on the crankshaft enabled them to virtually eliminate radial play with its related problems previously found in 2-cycle engines and produce a dependable small 2-cycle industrial engine.

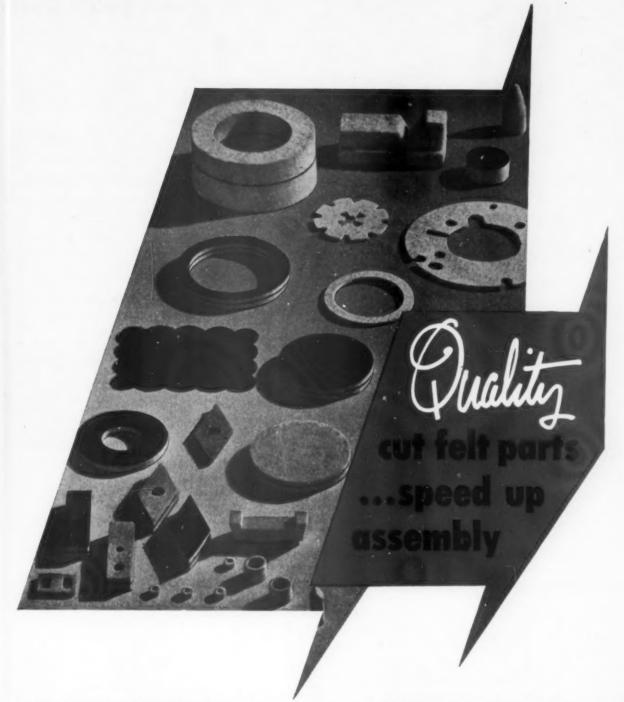
The application of BESF bearings to this and other Power Products 2-cycle engines helps give the engines longer life, easier starting, consistent operation, as well as accurate timing, hotter spark and less friction which means more power.

where anti-friction bearings should be used to make your

product better—places where their application produces benefits as it does for Power Products. Any of them, without obligation, will analyze the design of your product and perhaps show you how to make it better.

MET INDUSTRIES, INC., PHILADELPHIA 32, PA.,
manufacturers of BKF and HESS-BRIGHT® bearings.





You can obtain custom-cut felt parts from American, ready for assembly without further processing. Gaskets, washers, seals, wicks, discs—any shape you need, simple or complicated, can be turned out by us on high-speed machines, with tolerances to meet your specifications.

QUICK DELIVERY — American operates four strategicallylocated cutting shops to serve industry. The one nearest you will fill your order rapidly. Cutting shops are located at:

GLENVILLE, CONN. DETROIT, MICH. LOS ANGELES and SAN FRANCISCO, CALIF.

These are manned and managed by men who will see that your production is never slowed up by lack of cut felt parts.

QUALITY — American produces felt to exact specifications, uniform in density, blend, thickness, strength. This is an engineering material which can be controlled as closely as any other. If you wish, we will cooperate with you in designing felt parts and specifying the right felt to meet your exact requirements, whether for commercial or government applications.

QUOTATIONS —Send blue prints and specifications to the nearest Sales Office. Bids will be made at once.

AMERICAN CUT FELT PARTS MAKE IT UNNECESSARY FOR YOU TO INVEST IN MACHINERY AND TRAIN MEN TO CUT FELT TO YOUR SPECIFICATIONS.

American Felt Company

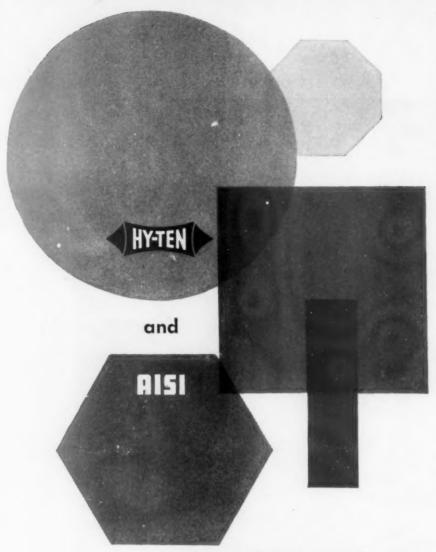
TRADE

GENERAL OFFICES: 74 GLENVILLE ROAD, GLENVILLE, CONN.

SALES OFFICES: New York, Boston, Chicago, Detroit, Cleveland, Rochester, Philadelphia, St. Louis, Atlanta, Dallas, San Francisco, Los Angeles, Portland, Seattle, San Diego, Montreal — PLANTS: Glenville, Conn.; Franklin, Mass.; Newburgh, N. Y.; Detroit, Mich.; Westerly, R. 1. — ENGINEERING AND RESEARCH LABORATORIES: Glenville, Conn.

For More Information Circle No. 305 on Inquiry Card-Page 17

G



bars, billets and forgings in sizes, shapes and treatments for every need!

Wheelock, Lovejoy & Company, Inc., can fill your alloy steel requirements promptly. This applies to both standard AISI and SAE steels and to our own HY-TEN steels—"the standard steels of tomorrow". Take advantage of our seven strategically located warehouses. All of them can supply these steels in the form and quantity you need. Every warehouse, too, is staffed with expert metallurgists who are ready to serve you.

Write today for your FREE copies of Wheelock, Lovejoy Data Sheets. They contain complete technical information on grades, applications, physical properties, tests, heat treating, etc.

near you

Warehouse Service—Cambridge • Cleveland • Chicago Hillside, N J Detroit • Buffalo • Cincinnati In Canada—Sanderson-Newbould, Ltd., Montreal and Toronto



WHEELOCK, LOVEJOY & COMPANY, INC.

140 Sidney Street, Cambridge 39, Mass.

For More Information Circle No. 306 on Inquiry Card-Page 17

21 Aids for Annual Inventory

(Continued from page 70)

18. Make Spot Checks

Periodic checks during the actual inventory will insure more accurate results. Re-counting certain sections, checking out of the way spots, calling attention to empty cartons, and checking extensions in the tabulations will uncover some errors and will help keep everyone on his toes.

19. Use Recording Equipment

Recording equipment can sometimes be used to advantage at inventory time. With a wire or tape recorder, one person can count and dictate to the recorder, and tabulation can be completed later, when the inventory pressure is off.

20. Keep Crew Spirit High

Employees may enter into the spirit of taking inventory with enthusiasm. However, after several hours of counting, this enthusiasm seems to die down. Coffee and doughnuts, time out for a smoke and a coke, or just plain resting, will keep them interested in doing a good job.

21. Hire an Inventory Crew

In many cities, professional inventory service crews are available. These private organizations move into the plant at the appointed time, do their counting and listing, and in a relatively short time have the final lists ready for the inventory valuation. Hiring an inventory crew might eliminate all the headaches.

Tool Performance

(Continued from page 85)

In any case, tools cost a great deal of money. Keeping them sharp also costs a great deal of money. Grinding costs, together with the cost of down time of machines while changing tools, may far outweigh initial cost of tools. Consider, then, a few comparative tests of competitive tools made by Ford tool men.

On a test of four makes of a tungsten carbide chamfering tool, including the make then in use, the average number of pieces per grind ranged from 205 to 906, the total number of pieces per tool ranged from 2050 to 9060, and the estimated monthly tool cost ranged from \$366.40 to \$1481.90. In this case, the tool then in use was not the best by any means and one of the competing makes was chosen in its stead.

(Please turn to page 276)



Costly down time can be often eliminated or sharply reduced by the use of quality lubricants, properly applied. A large machine tool manufacturing plant found that "80% of all parts replacement can be avoided by proper lubrication."

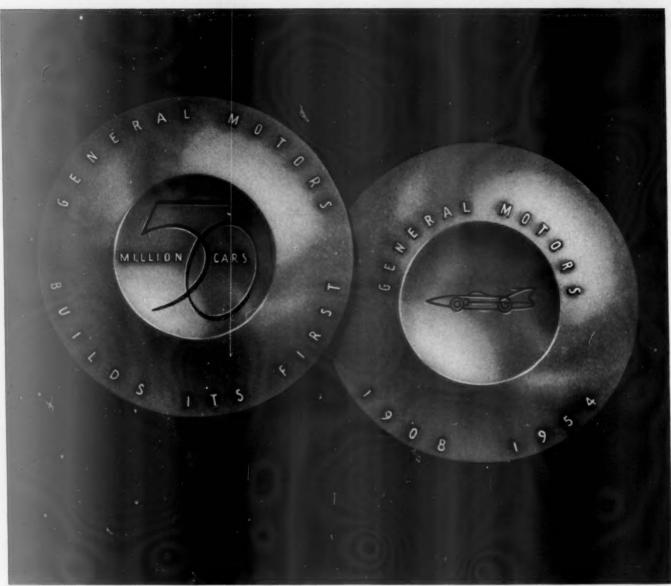
To insure the best possible protection for vital machine parts, use Gulf quality lubricants. Their superior film strength, their outstanding oxidation resistance, and their effective rust preventive properties are excellent guarantees of smooth, continuous operation and low maintenance costs.

Remember too that available to you is the helpful counsel of experienced Gulf Sales and Staff Engineers, a convenient source of practical assistance on lubrication and on all other phases of petroleum science. Write, wire, or phone your nearest Gulf office today. Gulf Oil Corporation • Gulf Refining Company, 1822 Gulf Building, Pittsburgh 30, Pa. cut your costs with

GULF QUALITY LUBRICANTS



al ed



COMMEMORATIVE MEDALLION OF BRISTOL BRONZE EXECUTED BY MEDALLIC ART CO. NEW YORK

BRISTOL BRASS SALUTES THE 50,000,000TH GENERAL MOTORS CAR

It's a giant step from the first General Motors car (a Cadillac) in 1908, to the 50,000,000th car (a Chevrolet) in 1954. And through the years, General Motors has faithfully built up quality along with quantity, so that today it can be said that "never have so many been offered so much for so little."

So it is a special satisfaction to Bristol to be able to say that there is Bristol Brass in the cooling system of many General Motors cars built today. And it is an added satisfaction to record here, also, the fact that the commemorative medallion shown above is made of Bristol bronze.

To General Motors, on this momentous anniversary, a sincere salute, together with the hope that "the dreams of today will be surpassed by the realities of tomorrow."



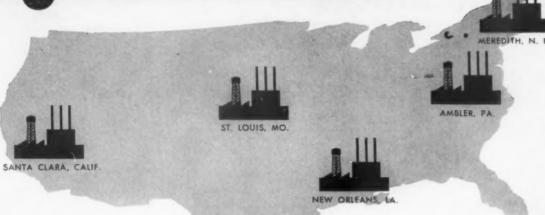
The Bristol Brass Corporation

makers of Brass since 1850 in Bristol, Conn.

Offices and warehouses in Albany, Boston, Buffalo, Chicago, Cleveland, Detroit, Milwaukee, New York, Philadelphia, Providence, Rochester, Syracuse. The Bristol Brass Corporation of California, 1217 East 6th St., Los Angeles 21. The Bristol Brass Corporation of Ohio, 1607 South Broadway, Dayton 8.

For More Information Circle No. 308 on Inquiry Card—Page 17

5 K&M PLANTS



800 DISTRIBUTORS

PUT CENTURY ASBESTOS PRODUCTS NEAR YOU

To give you prompt delivery of reliable asbestos products, there are Keasbey & Mattison distributors in every state, in every major industrial area. They in turn are supplied by the five K&M producing plants, strategically located. This broad distribution set-up puts the many fine K&M products just a phone call away from your desk.

And here's a point worth remembering: Your K&M distributor provides many worth-while "extras." His long experience in serving companies like yours enables him to offer

sound advice to help you increase efficiency and cut costs. He maintains adequate stocks of the supplies you need, saving you storage space, handling costs, and delivery time. For any of the products listed below, or for your other industrial needs, give your nearby K&M distributor a call. We shall gladly send you his name.

"CENTURY" Asbestos-Cement Corrugated and Flat Structural Sheets

"CENTURY" Asbestos-Cement Roofing and Siding Shingles

"CENTURY" Asbestos-Cement Pressure Pipe for Water Mains

Sprayed "LIMPET"® Asbestos for Acoustical Correction

"FEATHERWEIGHT"® 85% Magnesia and Hy-Temp Insulations

K&M Asbestos Textiles, Packing and many other asbestos products

KEASBEY & MATTISON COMPANY . AMBLER . PENNSYLVANIA

Nature made asbestos... Keasbey & Mattison has made it serve mankind since 1873



1G

UPSON-WALTON

tackle blocks



for EXTRA HEAVY work

ASK YOUR DISTRIBUTOR TO SHOW YOU ONE THE Upson-Walton heavy duty trucking snatch block is ruggedly built for the jobs which are beyond the strength of the regular snatch block.

Size	Wire Rope Diameter	Working Load
6"	1/2"-5/8"	7 tons
8"	3/4"-7/9"	9 tons

THE UPSON-WALTON COMPANY

12500 ELMWOOD AVENUE • CLEVELAND 11, OHIO
NEW YORK • CHICAGO • PITTSBURGH

MANUFACTURERS OF TACKLE BLOCKS, WIRE ROPE, ROPE FITTINGS—ESTABLISHED 1871
For More Information Circle No. 310 on Inquiry Card—Page 17

Tool Performance

(Continued from page 272)

In many cases, a tool which costs considerably more than another may be cheaper in the long run. Thus, in the case of a tungsten carbide reamer vs. a high speed steel one, the former cost \$10.23, while the latter cost only \$5.49. But the HSS tool produced only 300 pieces before it had to be resharpened, while the TC tool produced an average of 1600 pieces per grind. The HSS reamer produced a total of 600 pieces; the TC reamer produced 8,000 pieces. After figuring the cost of regrinding, down time of machine, etc., the monthly tool cost of the HSS reamer was estimated to total \$89.85 and that of the TC reamer. \$14.75. Needless to say, the TC tool was adopted.

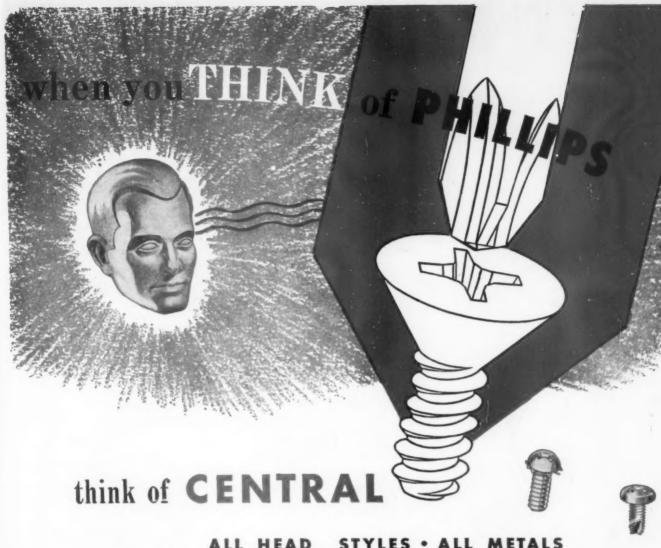
Ford tool analysts realize that the higher-price tool may be more economical in some cases, but they don't conclude, therefore, that it is more economical in all cases. In a test of reamers used on another job. a T-1 HSS tool cost \$9.20 and a C-5 TC one cost \$16. Considering output of each tool per grind and time required to change the two types of tools, it was discovered that when all of the costs were added up, the estimated monthly tool cost of the HSS reamer proved to be only \$167.04, while that of the TC reamer was \$1231.60. In this case, of course, the HSS reamer was chosen.

Help from Suppliers

In many cases, where difficulty is experienced in overcoming causes of excessive tool costs, representatives of tool manufacturers, and even of steel manufacturers, are called in. One such case was that of high consumption of gear hobs. Representatives of several manufacturers were asked to study this problem, various tests were made, and as a result, recommendations were made to invest \$38,400 in equipment which would effect yearly savings estimated to total \$191,-416.

As a result of these recommendations, a M-2 HSS gear hob which cost \$41.60 and produced an average of 61 pieces per grind and 305 pieces per tool was tested against a T-15 HSS hob which cost \$59.40 and produced an average of 206 pieces per grind and 1030 pieces per tool. The T-15 HSS tool produced over five times as many pieces per grind as the M-2 tool produced, the down time of the machine due to changing tools of the former specifi-

(Please turn to page 280)









PRECISION PRODUCTS-Many years of independent research in recessed head design provide definite money-saving advantages to users of Central's "perfect impression" of the famous Phillips head fastener. Centralized recesses, slotted to burr-free hairline tolerances, are perfectly aligned with the driver to start right and seat tight without wobble or overdriving.



SALES ENGINEERING - Whip the penalties of improper Phillips recessed fastener driving now and forever! Call in the nearby factorytrained Central man. He will gladly submit specific recommendations for prevention of costly surface disfigurement to insure mar-free assemblies of finished products.



3 COMPLETE FACTORY STOCKS-Write-wire-phone or teletype Central at any of the three addresses listed below for quick delivery of Central Phillips Recessed Fasteners from complete stocks of standard items.

1914 • 1954 SERVING INDUSTRY MORE THAN

S 0 d t

al

e

is a b, .5 ıt of n ie

1e ly er e,

is

es

and

re

at

os.

11is

le,

ns

in r-

a-

ch

er-

305 a .40

206 er eed oer the

to

ifi-

NG

YEARS







3501 SHIELDS AVE., CHICAGO 9, ILLINOIS

3028 E. ELEVENTH ST., LOS ANGELES 23 , CALIF. * 149 EMERALD ST., KEENE, N. H.

For More Information Circle No. 311 on Inquiry Card-Page 17





MORE and MORE
INDUSTRIAL BUYERS
ARE USING
THIS

DIRECTORY



A great number of industrial buyers have learned that they can save many valuable hours by using the Conover-Mast Purchasing Directory. But before switching over to the C-MPD, many of them wondered . . . "Can I actually get the information I want from this one-volume, conveniently sized directory"? They soon learned that the answer was an emphatic YES!

C-MPD carries only listings and product facts on the equipment, parts, supplies, and materials needed by industry. Non-industrial listings and ads are *rigidly excluded!* What's more—all the listings and ads on a given product appear in just one place . . . under the product's *primary name*.

4884

How about you? Do you want to find the right suppliers...faster? C-MPD will help you do just that. Use the purchasing directory industrial buyers reach for—with one hand. The more you use it—the better you'll like it. Write for literature today.

Conover-Mast Purchasing Directory

205 EAST 42nd STREET, NEW YORK 17, N. Y.

Cross-section shows how jackets extend to edge of flanges and include stuffing boxes on this Aloyco 1105 Jacketed Gate Valve. Also shown are the non-fouling, ball-and-socket split-wedge disc and mar-proof rocker-type gland plate and follower.

Now-

fully jacketed valves put the heat on slow-moving corrosives

Does your plant handle corrosive fluids that slow down or solidify under normal temperatures?

Then you're in line to benefit from the heat-holding design of Aloyco jacketed Gate, Globe and Check valves. Besides having all the Aloyco features shown at left, they're the only high alloy valves on the market to be *completely jacketed*.

They keep valves at higher temperature than steam tracing systems, and provide more uniform, less hazardous heating than thermal electric methods. You'll find them especially useful in line processing of rosin, resins, tars or tar oils, pthalic or maleic anhydrides, molten sulphur and other viscous liquids.

We'll be glad to arrange for a trial installation of Aloyco jacketed valves in your plant. Write the Aloyco Corrosion Engineering Service for further information. Alloy Steel Products Company, Inc., 1323 West Elizabeth Ave., Linden, N.J.

Fact-filled Bulletin No. 3 lists specifications and uses of Aloyco Jacketed Valves. Send coupon for your copy today.





ALLOY STEEL PRODUCTS COMPANY, INC. 1312 West Elizabeth Avenue Linden, New Jersey

Gentlemen

I am interested in Aloyco jacketed valves. Please send me a free copy of your Bulletin No. 3.

Name_

Firm_

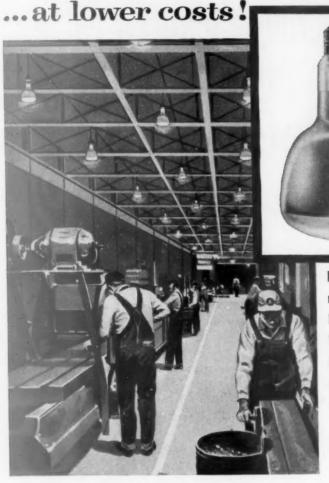
Address

City_

Zone State

Here's Better

HIGH-BAY LIGHTING



Brilliant,
new Sylvania R-52
Incandescent
Reflector Lamps
help raise production
records, reduce
maintenance.



Results show that R-52 Reflector Lamps greatly improve factory seeing conditions and enable workers to step up production.

The special reflector on the inner surface of this lamp is designed to concentrate a clear, bright light directly on the working area. And, because the reflector is sealed in, it cannot become smudgy from dust or smoke. The Sylvania R-52 permits an upward component of cheerful, over-all reflected light. Thus, you get a better maintained level of light... at low maintenance costs.

Sylvania R-52 Reflector Lamps are available in 500-watt and 750-watt sizes. For full details call your Sylvania Representative or write to Dept. 4L-4512, Sylvania today.

SYLVANIA

Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.

LIGHTING • RADIO • ELECTRONICS • TELEVISION
In Canada: Sylvania Electric (Canada) Ltd., University Tewer Building, St. Catherine St., Mentreel, P. Q.
For More Information Circle No. 313 on Inquiry Card—Page 17

Tool Performance

(Continued from page 276)

cation was far less than that of changing the M-2 HSS tools, and the estimated monthly tool cost of the one was \$1585.17, and of the other, only \$628.81.

In another case, cold heading punch and die failures became so excessive that representatives of a steel company were asked to study the problem and make recommendations. They found that the trouble was in the grain structure of the steel being used and recommended another variety with closely-controlled grain size, hardenability, porosity, and analysis. First tests of the new steel produced an improvement of over 300% in pieces per die and a second run showed an average improvement of 421%.

Broad Research Program

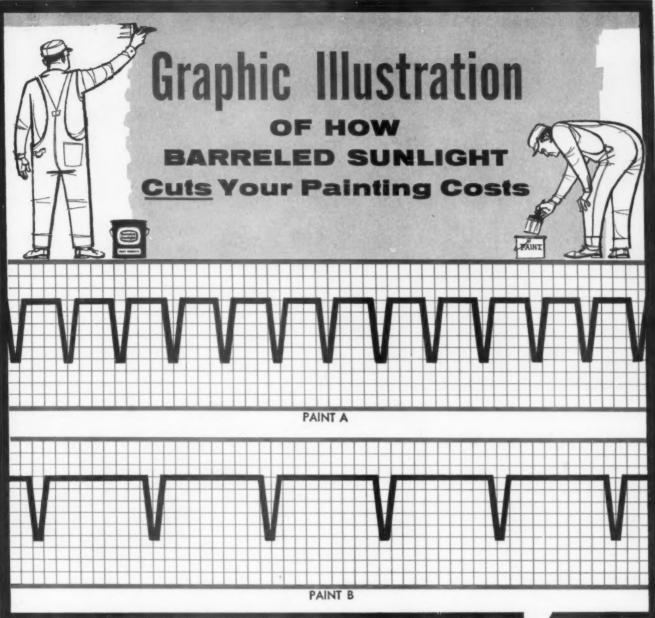
The Ford research program includes general supplies of all kinds, as well as tools. Savings have been made on gloves, aprons, brooms, oils, hydraulic fluids, paper towels, soap, and many other items as a result of making comparison tests.

"Consider hydraulic fluids," one Ford purchasing man said. "Vendors keep on trying to sell us a more expensive fluid than the one we are using. The more expensive fluid would add about \$700,000 a year to our costs. Unless there's this much additional benefit to us, we'll buy the lower-cost material.

"Or cutting oils. Some of the oils that are recommended to us would cost thousands of dollars a year more than we are paying for the quite satisfactory ones now in use."

"The success of a savings program on perishable tools and supplies," said a Ford purchasing agent, "depends a great deal on the cooperation and coordination between Manufacturing, Tooling Analysis, Tool Engineering, and Purchasing. It is through an efficient Purchasing department, adequately staffed with competent people, that many new methods and materials are referred to Manufacturing. A Tool Analysis Department that can be relied upon by Purchasing for the facts will play an important part in reducing costs of the end product.

"For our part, our success depends in considerable measure upon the accurate recording of results and the proper use of the information. To compete in a buyer's market, we must have better tools and better methods. This program is a major help in procuring better tools for less money."



Here are two "production charts" of a painter... the man who represents at least 80% of the total cost of a paint job. He paints. He dips. He paints and dips... hour after hour.

You will note that with paint B he dips much less frequently than he does with paint A... which is the surest way to save money on labor on any painting job. Every time a painter dips...it's unproductive time. He's dipping into your pocket and running up your costs.

That is why men who have been buying maintenance paints for years insist on famous Barreled Sunlight paints. They know that Barreled Sunlight's superior hiding power and spreading capacity make every brushful go farther, faster. They know that with Barreled Sunlight, a painter does more painting and less dipping per hour. He does the job faster... in fewer man hours... which means savings, great savings, in costs.

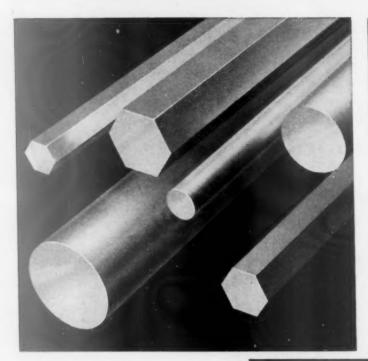
To see . . . through a simple on-the-wall test . . . how Barreled Sunlight saves money on materials as well as labor, write and our representative will gladly demonstrate. Barreled Sunlight Paint Co., 18-L Dudley St., Providence 1, Rhode Island.



Barreled Sunlight

Visit us in booth 307 at the 6th Annual Plant Maintenance and Engineering Show, International Amphitheater, Chicago, January 24-27, 1955

KAISER ALUMINUM PRODUCTS





Wire

Supplied as round drawn wire, hexagonal wire, rivet wire, welding wire, screen wire, EC wire, redraw wire.

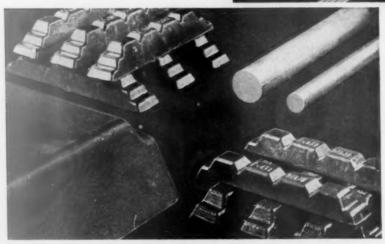
Rod and Bar

Available in a wide range of alloys in rolled and cold finished rod and bar, round and hexagonal standard screw machine stock, hexagonal bar, redraw rod, rivet rod and round forging stock, square and rectangular bar.



Sheet and Plate

Supplied as flat sheet, plate, coil sheet, circles in a complete range of alloys, sizes and tempers. Specialty sheets available on inquiry.



Pig, Ingot and Billets

Kaiser Aluminum produces Pig, Ingot and Extrusion Billets in a range of alloys and sizes to meet your specific requirements.

for you...the nation's fabricators



Extruded Shapes to meet your specifications

All standard alloys are available in custom shapes (solid, semi-hollow and hollow), structural, rod and bar, and in extruded tube. Like all our products, ex-

trusions are manufactured under metallurgical control—thus assuring you of highest quality.

More than 85 per cent of Kaiser Aluminum's total production is sold in the form of these mill products for fabrication by customers. It's the highest percentage in the industry.

We believe we are ideally equipped to work with you, because serving manufacturers with basic aluminum is our primary business.

In recent years, our services have been expanded in order to keep pace with our greatly increased production capacity—which today stands at close to 30 per cent of all the primary aluminum made in this country.

We have vastly expanded our national warehousing system, our distributing program, and our staff of metallurgists and field engineers.

We believe that the kind of service we offer—combined with the unsurpassed quality of Kaiser Aluminum—should be of particular interest to all aluminum fabricators in these days of stiffer competition.

For complete information, call or write any Kaiser

Kaiser Aluminum

setting the pace-in growth, quality and service

Aluminum sales office, located in principal cities. See our catalog in Sweet's Product Design File or write for copy. Kaiser Aluminum & Chemical Sales, Inc., General Sales Office, Palmolive Bldg., Chicago, 11, Illinois. Executive Office, Kaiser Bldg., Oakland 12, California.

Other Kaiser Aluminum products include: industrial foil, and electrical conductor. Kaiser Aluminum also supplies household, freezer and broiler foil for home uses; Shade Screening for the building industry and roofing and siding sheet for farm and industrial buildings.

MAIL COUPON FOR FREE HANDBOOK

Send for the new Sheet and Plate Handbook, 152 pages. A "must" for every fabricator of aluminum.

KAISER ALUMINUM & CHEMICAL SALES, INC.
INDUSTRIAL SERVICE DIVISION
51242 KAISER BLDG., OAKLAND 12, CALIFORNIA
Please send my free copy of "Sheet and Plate Handbook."
Name_____
Firm___
Address____
City_____State___

For More Information Circle No. 315 on Inquiry Card-Page 17

CUT COSTS

with EMERSON-ELECTRIC AIR CIRCULATORS

If stale, dead air handicaps your employes and drives customers away, it's costing you money.

You can cut this cost with Emerson-Electric Air Circulators. They move large volumes of air quietly...to keep "living conditions" inside your buildings comfortable and pleasant in all seasons. Don't let bad air add to your overhead...send for complete installation data today.

EMERSON-ELECTRIC AIR CIRCULATORS

Backed by the famous 5-Year Factory-to-User Guarantee, these powerful fans are available in 24" and 30" blade sizes, with two-speed, ball-bearing capacitor-type motors lubricated for 6,000 hours' service. Your choice of floor, counter, wall or ceiling mountings. For further information see your electrical contractor or write for Bulletin No. 797.





EMERSON-ELECTRIC EXHAUST FANS CUT COSTS, TOO!

For complete ventilation of your buildings investigate Emerson-Electric's complete line of direct- and belt-drive exhaust fans, in capacities ranging up to 19,350 c.f.m. Write for new catalog No. 797-A.

THE EMERSON ELECTRIC MFG., CO., St. Louis 21, Mo.



For More Information Circle No. 316 on Inquiry Card-Page 17

Purchasing Department Files

(Continued from page 86)

Instruments	(63)
Safety Equipment	(98)
Steel Pipe	(107)
Steel Valves	(115)
Tools, Hand	(123)

For each manufacturer who has representative literature in the commodity or catalog file, it is desirable to maintain a cross reference file card showing the following information:

Manufacturer's Name Catalog Yes No (Cat. Library) Literature Yes No (Comm. File) Index No. (30) (115)

The index number indicates the file source of the manufacturer's literature on (30) engines and (115) steel valves.

Requisition File

A purchase requisition file can be very valuable. The requisition is the medium by which the various departments advise the Purchasing Department of their requirements. Since it also contains the signatures authorizing the initiation of procurement, it is desirable to retain it. So long as the resulting purchase order is open, the requisition belongs with it. After it has served its purpose there, it can be filed separately. All cross reference numbers, such as purchase order and quotation numbers, should be entered on a space provided on the face of the requisition before the form is permanently filed.

The numbering system for requisitions is important to maintaining such a file. Depending on the particular company operation, it may be advantageous to allocate prefix symbols designating the department in which the requisition originates: for example: "E" for Engineering Department, "PL" for Pipeline Department, etc. Where numerous locations are involved, the location should also be identified; for example: PL-6 tells us that material has been requisitioned by the Pipeline Department at code 6 location-Greenville, Miss. Then by adding numerals of a series originating at the point of origin, a numerical file sequence can be maintained of the requirements of each department and departmental location.

The choice of this method simplifies the filing task of all departments, eliminates the added expense of purchasing prenumbered forms, and establishes a definite numerical

(Please turn to page 286)





It has to be accurate



Specify Brainard FOR WELDED STEEL TUBING

• Brainard welded tubing is an economical structural material, and offers many physical advantages. It has a smooth exterior, with all weld flash removed. Its wall thickness is uniform, since it is formed from flat strip. With welded tubing you can cut weight without sacrificing strength. And there's practically no limit to the design requirements you can meet with this easily fabricated material.

Brainard maintains continuous quality control throughout manufacture—from ore to finished tubing. Careful supervision assures you high quality. For complete specifications call or write Brainard Steel Division, 2412 Griswold St., Warren, Ohio.



For some good tips on cutting production costs...

... take a trip through the pages of this informationpacked booklet, "Some Good Things to Know About Metal Cleaning." You'll find job-tested data on many cleaning operations that could well pave the way to lower production costs.

As you flip through the pages, you'll learn how prepaint treatment with Oakite CrysCoat cuts costs 10 ways...discover modern methods for treating water in paint spray booths...read of the advantages of Oakite's rust-prevention methods...and more.

If you're also purchasing cleaning materials in connection with:

- Pickling, deoxidizing,
 bright dipping
- Paint stripping, steam detergent cleaning
- Burnishing, barrel cleaning
- Electrocleaning steel and nonferrous metals
- Machining and grinding

you'll want a copy of this well illustrated booklet for your files. It's yours for the asking. Write: Oakite Products, Inc., 54 Rector Street, New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. and Canada



For More Information Circle No. 318 on Inquiry Card-Page 17

Purchasing Department Files

(Continued from page 284)

Some good things

to know about

Metal Cleaning

check system to determine the existence of a lost requisition. The system provides a means for the Purchasing Department to examine the previous requirements any location has had for any or all types of material. Availability of this information is of prime importance to Purchasing, providing the data needed to study usage, standardization, quantity purchases, etc. The purchase requisition, properly filed and used, can be one of the most important documents processed by the Purchasing Department.

Filing Correspondence

The problem of filing Purchasing Department correspondence is a constant one. Copies of incoming correspondence, in practically all instances, should be filed with the records of the transaction that caused the correspondence to develop.

It has been found advantageous to distribute copies of outgoing correspondence and inter-company communications to all persons within the company who may be interested or affected. An alphabetical reading file is of course essential for reference. Prior to filing a piece of correspondence permanently, it should be circulated in a predetermined pattern to ranking individuals in the Purchasing Department for noting and initialing. The reasons for this suggestion are three-fold:

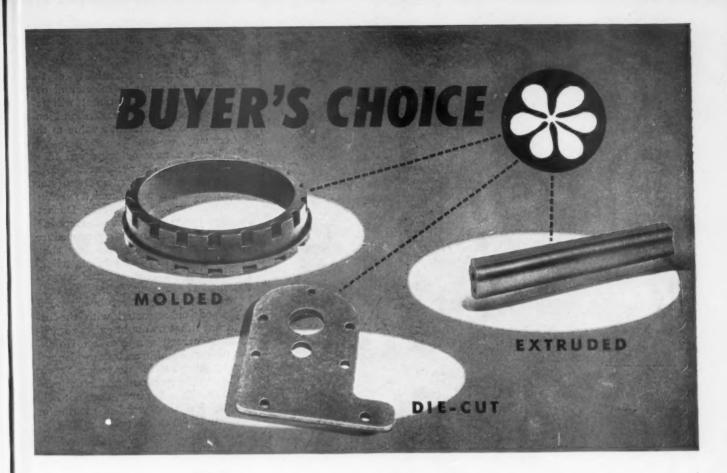
1. It keeps the Purchasing Agent and Assistant Purchasing Agent of the transactions evolved by the various members of the department, and of the progress and status of those transactions. This also minimizes the confusion that might arise due to absenteeism, transfer, or turnover among employees on short notice.

2. It provides the Purchasing Agent with an opportunity to discuss with those under his supervision the various phases that transpire in the course of a day's activities.

3. It provides a wholesome incentive to insure intelligent, courteous, and neat correspondence that will be a credit to the company and the department, and that will most effectively achieve the desired results.

Regardless of the merits of one system over another—and this will vary according to the specific requirements of the particular com-

(Please turn to page 288)



*ACADIA SYNTHETIC RUBBER PARTS ARE MADE ALL 3 WAYS!

With Acadia you have a choice! Not only molded rubber . . . not only molded and diecut . . . not only extruded rubber . . . but rubber parts any way you require! Better yet, Acadia uses whatever method the requirements of the job and you dictate is the best way to do it.

Acadia is especially sensitive to your specifications. We will process synthetic components for oil-resistance—good aging properties—resistance to heat—any characteristic you're seeking, or a combination of characteristics. Acadia parts are cut, molded or extruded to all required shapes, sizes and types, with almost unlimited applications.

Also, we offer Acadia SILICONE Rubber, molded or extruded for gaskets, seals, "O" rings, washers, sheets, cut-parts and packings. This is the rubber that will stay resilient at 100° below zero, or 500° above!

There's an Acadia Sales Engineer near you to serve you. Write us today, and we'll put him in touch with you immediately.



DIVISION OF WESTERN FELT WORKS

4035-4117 Ogden Ave., Chicago 23, Illinois Branch Offices in Principal Cities

MANUFACTURERS AND CUTTERS OF WOOL FELT

For More Information Circle No. 319 on Inquiry Card-Page 17



Purchasing Department Files

(Continued from page 286)

pany—it is a responsibility of the purchasing agent to select and develop a filing system that will facilitate efficient operation and enhance the department's value to the

When a new or improved filing system becomes necessary, a logical means of setting up is to start by drafting a policy and flow chart of the various Purchasing Department forms concerned. Before definitely establishing a set procedure, circulate the policy and flow chart throughout the department, soliciting criticism, opinions, and suggestions. The advantage of the written policy is that it can be amended, defined, or retracted with the assurance that no doubt exists regarding a correct interpretation. No excuse can be offered by any department member for not carrying out the specific plan outlined in the procedure. This, however, does not hold true for the word-of-mouth or taken-for-granted policy.

You can expect to get out of your files and filing systems only what you put into them. Files, like men and machines, can often be improved. Good filing techniques are worth investigating.

Military Procurement

(Continued from page 74)

is priced competitively, and will be delivered on time. The seller understands that as long as these principles are observed, he will be able to rely upon continued business from his customer. This relationship finds its beginning in the housewife regularly patronizing the same grocer, and it reaches maturity when the industrial giants of the Nation desire permanent trade connections with reputable suppliers.

This condition does not impede the impelling force of free competion. On the contrary, when a supplier realizes that a concern to whom he sells his product is a regular and reliable customer, he becomes all the more aware of the need to bid accurately, to price closely, and to back up his promises of quality and delivery with action. This relationship can have but one result. It provides better performance and better products, with timely deliveries at lower prices.

It is this relationship in industry

(Please turn to page 292)

UDYLITE Automatic PLATING

USED ON FORD PISTONS

Ford Motor Company of Canada, Ltd. tin plates all pistons for long life



In the big, modern engine plant of the Ford Motor Company of Canada, Ltd., Windsor, Ontario, you will find a Udylite

plating machine performing mass production of tin plated pistons . . . and it's done automatically.

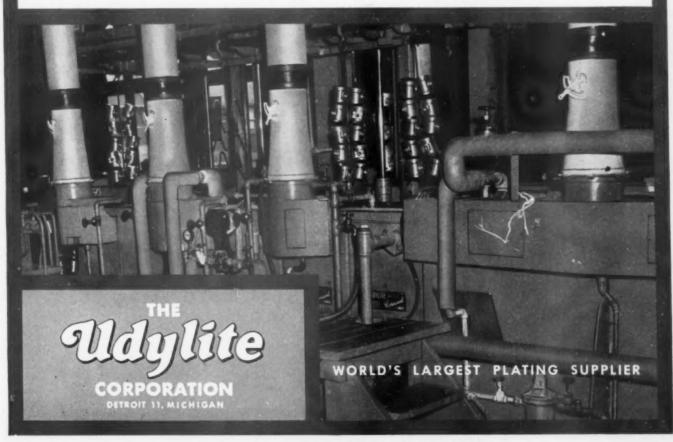
Tin plated pistons give longer engine life and higher performance to Ford of Canada's cars and trucks . . . all a part of Ford's high standard of manufacture.

With Udylite equipment you can be sure of the uniform quality which must not vary. That is where Udylite experience pays off. For when you install Udylite plating systems you get the completely integrated combination of finest equipment, rectifiers, processes and supplies. They *must* all work together to give the best results.

In Canada's rapid industrial growth more and more companies are turning to Udylite for this completely planned plating combination, just as they are throughout the world. We will be glad to show you how well it applies to your plating problem.

In Canada write to: Canadian Hanson & Van Winkle Co., Ltd., Toronto 3, Canada.





"If our executives did not read BUSINESS PUBLICATIONS I'd consider them unfit for their jobs"

Col. Willard F. Rockwell, Chairman of the Board, Rockwell Manufacturing Company



"We feel the same way about our sales managers," Colonel Rockwell continues. "We expect them to know what is being printed in the business publications and to guide themselves accordingly. Further, we ask our salesmen to keep our home office informed about the comments of our customers on business periodicals."

Like Colonel Rockwell, other business and profes-

sional leaders the country over are reading business publications covering their fields of activity. They are getting from these magazines vital information about new products, new methods, new marketing trends, price and distribution changes through the advertising as well as the editorial pages. The Business Press offers a direct route to anyone who has anything to sell to business and professional men.



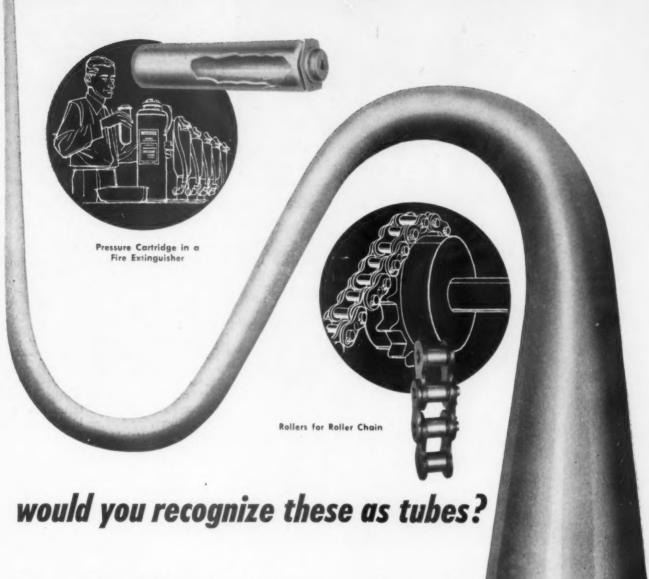
For a United Business Press

NATIONAL BUSINESS PUBLICATIONS, INC.

1001 FIFTEENTH STREET, N. W. . WASHINGTON 5, D. C. . STerling 3-7535

The national association of publishers of 161 technical, professional, scientific, industrial, merchandising and marketing magazines, having a combined circulation of 3,524,478 ... audited by either the Audit Bureau of Circulations or Controlled Circulation Audit, Inc...serving and promoting the Business

Press of America...bringing thousands of pages of specialized know-how and advertising to the men who make decisions in the businesses, industries, sciences and professions...pinpointing your audience in the market of your choice. Write for complete list of NBP publications.



a better product at less cost can be yours when you recognize the advantages of using GLOBE steel tubes!

T ODAY, with cost conscious buyers demanding more for their money, it's your responsibility to develop new and better manufacturing methods. There may be parts of your equipment now forged, cast or machined which can be made better from Globe tubing. Result . . . elimination of costly machining operations, and a part that is made better, faster, and at lower cost.

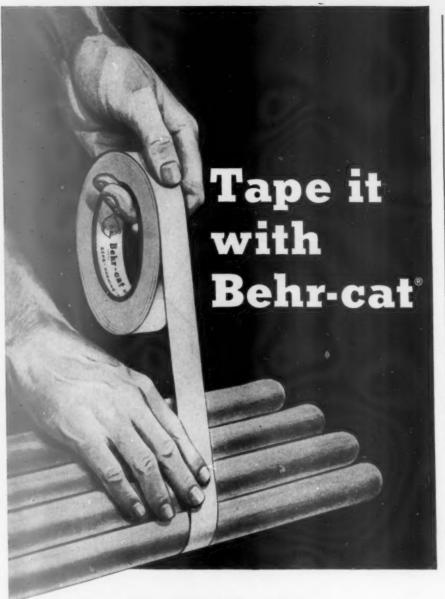
Why not investigate the possible use of Globe tubing in your product? Globe's "one-source" supply offers seamless carbon, alloy, and stainless tubing in a complete range of sizes and analyses. Globe metallurgists and engineers are available to assist in the proper selection of tubing for your particular job. Write for the Globe General Catalog.

Producers of Globe
seamless stainless
steel tubes — Gloweld welded stainless steel tubes —
alloy — carbon —
seamless steel tubes
—Globeiron (highpurity ingot iron)
seamless tubes —
Globe Welding
Fittings

GLOBE

STEEL TUBES CO.

Milwaukee 46, Wisconsin
Chicago * Cleveland * Denver
Detroit * Houston * Los Angeles
New York * Philadelphia
San Francisco
St. Louis



... and slash bundling costs



BEHR-CAT Strapping Tape is filament-reinforced, giving it tough holding strength. It's easy to handle and sticks at a touch. Use it to save on shipping, packing and materials handling costs.

Behr-Manning Corp., Troy, N. Y. In Canada: Behr-Manning (Canada) Ltd., Brantford,

For Export: Norton Behr-Manning Overseas Inc., New Rochelle, N. Y., U. S. A.



Military Procurement

(Continued from page 288)

that, probably above all others, makes industrial purchasing efficient. It is the prohibition of this relationship that generates the sole inherent weakness in Government purchasing efficiency.

Price of Impartiality

To this undesirable fact, like the others previously discussed, there unfortunately is no solution. When permanent suppliers are chosen on the basis of profit, a correct choice is assured; if they were chosen on the basis of patronage or on any other political basis, an incorrect choice would be certain. So here again, increased costs in procurements must be made to insure impartiality. This is the same thing as again saying that there is no way to prevent paying a little extra for democratic procurements.

The intent of this article is not to extol the virtues of the military purchasing agent. Rather it is to show why his administrative costs are much higher than those in industry, and why he is unable to get delivery as fast as his counterpart in industrial purchasing.

Contrary to general opinion, however, within the rules and regulations which he must follow the military purchasing agent is called upon to know and use all of the practices, principles, and techniques of purchasing. Top management in the Navy, like top management in industry, is fully aware that purchasing is a dynamic business function which is deserving of the top talent of the enterprise for its operation and improvement.

Third Party Guarantees Payment

(Continued from page 92)

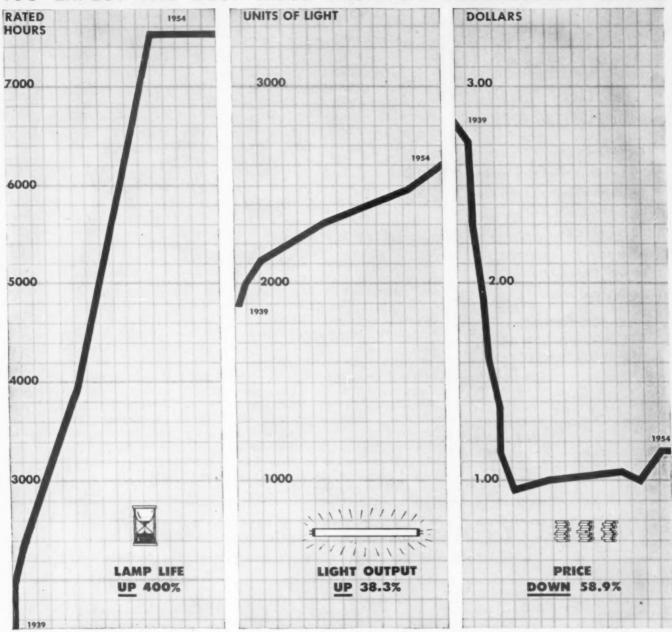
cision in which the subcontractor was told, "We will see to it that you are paid."

"Whether a promise is an original one not coming within this statute or a collateral one required by the statute to be in writing," observed the Supreme Court of North Carolina in a recent decision, "is to be determined from the circumstances of its making, the situation of the parties, and the objects sought to be accomplished."

The one method and the only safe method under doubtful circum-

stances is to follow the statute. Put no faith in mere words but put trust in a writing signed by the party making the promise.

YOU EXPECT THE BEST VALUE FROM G-E FLUORESCENT LAMPS



16 times more value for your fluorescent lamp dollar than in 1939



Today you don't have to pay more than \$1.15 for the finest fluorescent lamp made: General Electric. Fifteen years ago it would have cost you \$2.80 or \$1.65 more. And while price has been going down, we've been pushing quality up. General Electric has upped light output 38%, increased lamp life 400%.

In terms of what you really judge lamps by, a General Electric 40-watt fluorescent lamp that lists at \$1.15 today is a 16-times bigger value than it was in 1939.

For further information, contact your G-E lamp supplier or write to Lamp Division, General Electric, Department 166-P-12, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL (ELECTRIC

For More Information Circle No. 324 on Inquiry Card-Page 17

HOT DIP GALVANIZING

... EXCELLENT FACILITIES for PICKLING & OILING

Our Record: Over 50 years of progressive galvanizing service to manufacturers and fabricators of iron and steel products . . . any size or shape, any size order from the smallest to the largest. Excellent facilities for pickling and oiling.

"TO ECONOMIZE, GALVANIZE AT ENTERPRISE"

ENTERPRISE GALVANIZING CO.

2519 E. CUMBERLAND STREET PHILADELPHIA 25, PENNSYLVAN:A

For More Information Circle No. 325 on Inquiry Card-Page 17

Third Party Guarantees **Payment**

(Continued from page 292)

In a case in which this statute was interposed as a defense, decided by the Supreme Court of the United States, the promise had been made by the owner of a mining company to a trucking contractor, "You go home and I will pledge you my word that I will telegraph the money to you to the First National Bank by the 1st of October."

Put It in Writing

When he was sued on this promise, the owner of the mining company interposed this statute in his defense. In holding him personally liable and not merely the guarantor of the debt of the mining company, the court said:

"His promise was not one purely collateral to sustain the obligation of the mining company, but substantially a direct and personal one to advance his own interests. He therefore, in any true sense of the term, occupied not a position of a collateral undertaker but that of an original promissor, and it would be a shadow on justice if the administration of the law relieved him from the burden of his promise on the ground that it resulted to the benefit of the mining company.

A Freventive Measure

"The purpose of the provision," added the court in a comment that emphasizes the wisdom of putting any promise of this character in writing, "was not to effectuate but to prevent wrong. It does not apply to promises in respect to debts created at the instance and for the benefit of the promissor, but only to those by which the debt of one party is sought to be charged upon and collected from another.

"There is also a temptation for the one to whom the promise is made, in a case where the real debtor has proved insolvent or unable to pay, to enlarge the scope of the promise or to torture mere words of encouragement and confidence into an absolute promise. It is so obviously just that a promissor receiving no benefits should be bound only by the exact terms of the promise that this statute requiring a memorandum in writing was enacted."

BUYER'S & SELLER'S MART

Contract Work

Equipment For Sale

Employment and Business Opportunities

Send orders to: CLASSIFIED DEPARTMENT

PURCHASING

205 East 42nd Street, New York 17, New York

Positions Wanted

Purchasing Assistant wishes to work for Master of Business Administration degree at night sessions. New York City preferred. Northern New Jersey resident. Write Box 1432, Purchasing, 205 East 42nd St., New York, N. Y.

Purchasing Executive, age 45, Pharmaceutical experience. Accounting and Business Administration. New York City or Long Island. Resume on request. Write Box 1433, Purchasing, 205 East 42nd St., New York, N. Y.

PURCHASING AGENT-25 yrs. experience, General Electric Co., Fram Corp., American Machine & Foundry. Inventory & Non-Inventory items. Fully capable of setting up complete Purchasing system, large or small. Relocate if required. Complete resume on request. Age 45, married, \$5500 - \$6500. Write Box 1434, Purchasing, 205 East 42nd St., New York, N. Y.

Purchasing Agent-experienced in General Purchasing, Accounting background, seeks position in northern New Jersey or New York City in General Purchasing or specialized purchasing or printing and paper boxes. Eight years experience in box industry. Write box 1435, Purchasing, 205 East 42nd St., New York, N.Y.

Do you use more than 200 lbs. of wiping rags a year? Do you rent industrial towels for 1½ to 3¢ each plus replacement costs?

Then change to 17¢ per lb. GREASE CHAMP... it costs slightly more than 1¢ for a cloth twice the size of an industrial towel.

Buy It And Save Twice: (1) 4 to 10¢ a lb. on your present wiper bill; (2) on the extra work Grease Champs performance guarantees. Write For Our Special Trial Bale Offer Now!

SAFEGUARD COMPANY, INC. DEPT. P., BOX 112 Tamiami Station, Miami 44, Fla.



ABRASIVES WANTED

Rolls, Sheets, Bands, Belts, Mounted Wheels, Grinding Wheels, Rotary Files, Snap Gages, etc.

For best Prices and Quick Deals

Write, K and K Sales

525 W. 76th St. Chicago 20, III. Phore RAdcliffe 3-1818







PITTSBURGH BRUSHES

Here's why: Poor quality paint brushes waste time and money! Your best insurance against slow work and poor, final appearance is Pittsburgh Red Stripe Brushes! For one thing, when Pittsburgh labels a brush "100% hogs' bristle" you know it's not only true, but it's also the finest bristle obtainable. Secondly, the Red Stripe trademark is your assurance of brushes made to the top standards of the industry. Whether you choose 100% hogs' bristle, 100% texturized synthetic (Pittsburgh's improved Velvet-Tip synthetic), 100% Tynex Nylon or hogs' bristle—synthetic mixtures, you can depend on Red Stripe!

For the address of the Pittsburgh supplier nearest you, write: PITTSBURGH PLATE GLASS COMPANY, Brush Div., Dept. H12, 3221 Frederick Ave., Baltimore 29, Md.

Maintenance, power-driven and paint brushes for every home and industrial use

PITTSBURGH



BRUSHES . PAINTS . GLASS . CHEMICALS . PLASTICS . FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED
For More Information Circle No. 328 on Inquiry Card—Page 17



For long life under extreme conditions of shock, vibration, corrosion, humidity and temperature



HEAVY-DUTY ELECTRICAL CONNECTOR

Here is the electrical connector designed and built for maximum performance under rugged operating conditions.

Intended for use with jacketed cable and not requiring ground return through mating surfaces, this connector incorporates sealing gaskets at all mating

W-Type Bendix* Connectors also incorporate standard Scinflex resilient inserts in established AN contact arrangements. Shell components are thicksectioned high-grade aluminum for maximum strength. All aluminum surfaces are grey anodized for protection against corrosion.

For the real tough jobs, be sure to specify the W-Type Electrical Connector.

Our Sales Department will gladly furnish complete specifications and details on request.

*TRADE-MARK

SCINTILLA DIVISION

SIDNEY, NEW YORK Bendin





Export Sales: Bendix International Division, 205 East 42nd St.,

New York 17, N. Y.

FACTORY BRANCH OFFICES: 117 E. Providencia Ave., Burbank, Calif.
Stephenson Bidg., 6560 Cass Ave., Detroit 2, Mich. • 512 West Ave.,

Jenkintown, Pa. • Brouwer Bidg., 176 W. Wisconsin Ave., Milwaukee,

Wisc. • American Bidg., 4 S. Main St., Dayton 2, Ohio • 8401 Cedar

Springs Rd., Dallas 19, Texas

For More Information Circle No. 329 on Inquiry Card-Page 17 296



Saves you time and headaches

Exacting jobs like the one shown here - or more simple pieces, from wire size to 4%" round - all are processed exactly to your specifications on modern machines by skilled, experienced workmen. Western does the whole job - all secondary and finishing operations including heat-treating and grinding.

The special aircraft part illustrated above is machined from stainless steel bar stock and heat-treated to 28-36 Rockwell C. It is hollow from end to end, the dimension of the wall being held to as little as 1/32", with an I.D. tolerance of only .0008". All surfaces are held to a 10 micro inch finish.

Your jobs may not require this "kid-glove" treatment, but large or small, plain or fancy, you can save yourself headaches, delays and high costs by getting quotations from Western - NOW.



For More Information Circle No. 330 on Inquiry Card-Page 17 PURCHASING



For every service

STOCK BODY VALVES BRONZE . STEEL . IRON BODY VALVES

keep your operations

moving

Name your need! There's a Stockham valve to do the job. High resistance to corrosion . . . less maintenance under severe conditions of temperature and pressure . . . exceptional efficiency in controlling flow of normal or corrosive liquids, gases, slurries.

Gate, globe, check or plug . . . bronze, iron body or steel.

Write for Valve Catalog 50 V; Steel Valve Catalog;
Pipe Fitting Catalog 50 F.





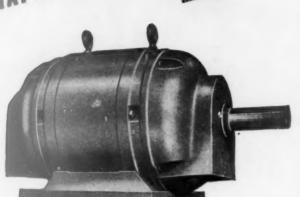
STOCKHAM VALVES & FITTINGS

GENERAL OFFICES AND PLANT • BIRMINGHAM 2, ALABAMA
Warehouse Stocks and Sales Services Strategically Located
DISTRIBUTED THROUGH WHOLES ALERS

ING

VALLEY
BALL BEARING
MOTORS

STAY ON THE JOB.



When specifying the power unit for your machinery, bear these exclusive VALLEY features in mind!

- Specifically designed for 'round-the-clock' duty in high temperatures.
- Drip proof and splash proof, semi-enclosed construction protects motor from harmful liquids and flying particles.
- Fully enclosed ball bearings reduce friction 75% to provide a saving in power.
- Built in ½ to 7.5 horse power sizes for wide adaptability in your power planning.

VALLEY Motors, stay on the job longer, even under heavy and continuous power demands. Thus for economical power that will last the life of your equipment — always specify VALLEY.



TOTALLY ENCLOSED FAN COOLED

The latest development in Air-Cooled, Ball Bearing motors. Totally enclosed to assure protection against dripping or splashing liquids, metal chips, and damaging dust. 2 to 60 h. p.

Write For Descriptive Literature.

ELECTRIC CORPORATION
4221 FOREST PARK BLVD. - ST. LOUIS 8, MO.

For More Information Circle No. 332 on Inquiry Card-Page 17

behind the scenes at ESSMUELLER!





For More Information Circle No. 333 on Inquiry Card-Page 17

Every Purchasing Agent Should Have This Book

"Profiting From Industrial Standardization"— \$5.50

By Benjamin Melnitsky Foreword by Stuart F. Heinritz

You will find complete and down-to-earth information on materials standards and specifications . . . purchasing, process and finish specifications . . . parts standards . . . manufacturing standards . . . design practice standards . . . proper review intervals . . . and on through the entire subject of how your company can benefit from a standards program

How to use tested methods to develop and revise standards—how to organize and use a nomenclature system—how to allocate standards activities, responsibilities and authority—how to organize company standards—all these and more are explained thoroughly and concisely in this practical guidebook to industrial standardization.

Free 10-day Examination

CONOVER-MAST PUBLICATIONS, INC.

Book Division

205 East 42nd Street, New York 17, N. Y.

WHEEL RIGHT UP TO GREATER PROFITS!

Here are the reasons why rubber-cushioned Brightboy Wheels are gaining wider acceptance among a rapidly-increasing number of industrial users:

BURRING, CLEANING, FINISHING, POLISHING— In one operation. Time savings frequently as much as 50%! *THE ABRASIVE "MATCHED" to the JOB

—for faster, finer work
UNBELIEVABLY-NEW WORKING ACTION
WITH EXTENSIVE ADAPTABILITY

Simultaneous abrasive-and-rubber action. Bridges the gap between the grind and the buff. Frequently achieves the final polish. For all metals, plastics, laminated

materials. Goes far beyond other methods.

A completely new concept of finishing.

*NEW! STOCK
ABRASIVES.

"MATCHED" TO YOUR OWN
FINISHING REQUIREMENTS
Rubber-Cushioned Brightboy now
available in either ALUMINUM
OXIDE or SILICON CARBIDE
GRAIN sizes ranging from EXTRA FINE
TO EXTRA COARSE
in SOFT, FIRM and
TOUGH RUBBER
BINDERS

TRY A TEST! Pick up a few Brightboy Wheels, along with Brightboy literature, from your dealer. Write us for it if he cannot supply you—and on any problem where finishing is in-

Brightboy
RUBBER CUSHIONED ABRASIVES

BRIGHTBOY INDUSTRIAL DIVISION WELDON ROBERTS RUBBER CO. 95 North 13th St., Newark 7, N.J.

For More Information Circle No. 334 on Inquiry Card-Page 17

May We Serve You?



72 East River Street

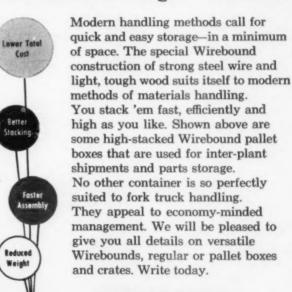
Davenport, Iowa
For More Information Circle No. 335 on Inquiry Card—Page 17

DECEMBER, 1954

FRENCH & HECHT
DIVISION
KELSEY-HAYES WHEEL COMPANY
DAVENPORT, IOWA



No matter where they're bound SHIP THEM WIREBOUND! and Stack 'em High As You Like



Wirebound BOXES & CRATES

MAIL THIS COUPON NOW!

WIREBOUN	D BOX MANUFACTURERS ASSOCIATION
loom 115	3, 327 South LaSalle Street, Chicago 4, Illinois
] Have d	sales engineer give me the whole story
Send n	ne a copy of "What to Expect from Wirebounds"
Name	
Firm Nam	
Address_	
	and State

For More Information Circle No. 336 on inquiry Card—Page 17

299

REAL HELP

I want to compliment you on the wonderful contribution you are making to the purchasing profession through Purchas-ING Magazine. Sometime over a year ago, we in Purchasing, in our organization, sponsored a fairly well organized Cost Reduction Program, and I find much in your magazine of real help to us in selling cost consciousness in our organization, particularly at the management level. Several times in recent months, I have taken the liberty of lifting certain information and editorials from Purchasing, giving them wide distribution in our own organization, to which I hope you have no objections.

B. M. Smarr, Dir. of Purchases

Avco Manufacturing Corp. Cincinnati, Ohio

LISTS OF P.A.'s

We wonder if you can extend your good advice to us and suggest a directory or annual that not only lists company names but their personnel, par-

ticularly purchasing agents.

We are currently using well-known standard reference works of this type but neither quite seems to hit the mark as far as we are concerned from the

Purchasing Agents angle.

H. W. Cleveland
New Departure, Div.
General Motors Corp.
Bristol, Conn.

 Most of the industrial directories issued by State Chambers of Commerce or Manufacturers' Associations (like the Associated Industries of Massachusetts) are quite complete in their listing of company officers and executives, including purchasing agents. Such directories are available for a number of the highly industrialized states-Ed.

"MORE EFFICIENT PURCHASING"

Among the other interesting items of the September issue of Purchasing is a reference to a brochure issued by the National Sales Executives. The title is National Sales Executives. The title is "20 Ways to More Efficient Purchasing", mentioned on page 29. Since any new ideas on efficient purchasing are always welcome in our department, I would

truly appreciate your referring me to

a source where this brochure is available.

Doyle T. Cooley

Celanese Corp. of America
Bishop, Texas

 Mr. Cooley and the numerous other readers who have requested copies of the brochure may obtain them from the National Sales Executives, 136 E. 57th Street, New York, N. Y.—Ed.

BUILDING A PRICE INDEX

I recently attended the Purchasing Seminar at the University of Minnesota and enjoyed the talk given by your Managing Editor. He mentioned that you had available information on how to build a price index. I would appreciate receiving this information.

E. L. Bastian, P.A. Lake Shore Engineering Co. Iron Mountain, Mich.

• Reprint of the article, "How To Build Your Own Price Index" (Purchasing, Jan., 1952), has been sent to Mr. Bastian, and a number of other purchasing agents requesting it.—Ed.

"INDUSTRIAL PURCHASING" FILM

The film, "Industrial Purchasing", arrived in ample time for the preview showing on October 4. The meeting at which the film was shown was indeed a success. The film was used as the basis of a panel discussion and we had over 60 minutes of spirited discussion, most of which came from the floor. As a matter of fact, we had difficulty closing the meeting at the appointed hour.

We wish to thank you very much for making the film available to us and wish to compliment vou for sponsoring such a worthwhile film.

A. T. Hunt, Jr. Chairman, Program Committee York Purchasing Agents Assn. York. Pa.

• After four years, the 20-minute color picture, showing a modern industrial purchasing department in action, continues to be a big hit.

"Industrial Purchasing" is available for showing to association meetings. company conferences, etc. Address requests to Purchasing Magazine, 205 E. 42nd St., New York 17, N.Y.

REWORKING DEFECTIVE MATERIAL

Your recent ballot on charges for reworking defective material (See Purchasing Opinion Reports, Purchasing, Oct., 1954) is very timely. We recognize this as an important problem for review at this time.

As in any industry, the problem is not just black or white but has many gray areas where policy must be established or modified to reach a practical solution to a situation. In our case, our ultimate customer may find it necessary to require more quality than at first was specified or believed by the engineers to be possible. It is worth something in cooperation to be able to get all parts or sub-assemblies reworked to new standards at little or no increase in cost. Arthur G. Pearson

Northrop Aircraft, Inc. Hawthorne, Calif.

ASSOCIATION ADDRESS

• For the benefit of the many correspondents seeking further information on the article, "Second Life for Industrial Gloves", (Purchasing, August, 1954, p. 109) the address of The Institute of Industrial Launderers is 1627 K Street, N.W., Washington 6. D.C.-Ed.

INDEX

• An index of editorial material appearing in Purchasing during the past 12 months will soon be avaliable in pamphlet form. Requests for this valuable aid in finding articles of particular interest to you should be addressed to PURCHASING Magazine, 205 E. 42nd St., New York 17, N.Y.—Ed.

New Design Motor Gives 30% More Power to

Speed Increased to 5,000 r. p. m. for Greater Performance On the Job!

Powerful ... fast ... light ... and safe! That's the new, improved SKIL Model 852 Heavy Duty Sander. With 30% more power for increased r.p.m. to 5,000, this perfectly-balanced sander assures you highest maintained working speed on all jobs.

New front handle location makes more efficient use of tool weight. Shorter length and lighter weight lessen operator fatigue throughout day-long use. The new SKIL Model 852 is practical, dependable . . . giving peak performance at maximum safety.

No matter what your product, nor what phase of its production is involved . . . if the problem concerns grinding, polishing, sanding, or finishing-"SKIL is the Answer"!



These Big Features Make SKIL Your Best Buy in Disc Sanders!



IMPROVED MOTOR! Radically changed to give 30% more power! Maintains high load speed ... yet runs cooler!



REAR HANDLE! Scientifically contoured to fit the hand. More comfortable to use and carry to the job.



PRECISION-CUT GEARS! Spiral bevel gears cushioned in synthetic rubber. For longer-lasting, smoother operation!



TRIGGER SWITCH! For greater comfort in use; with continuous operation button. Dustproof, 2-pole design.



FRONT HANDLE! Scientifically positioned for better balance and control. For right or left hand use.



INSPECTION PLATE! Extra large, easy to remove for complete inspection and cleaning of brushes, commutator.



TOOL REST! A SKIL extra for added convenience. Protects work when sander is laid



SPINDLE LOCK! Conveniently located at front of tool housing. Makes accessory changes far easier.



CORD PROTECTOR! Extra-long rubber protector keeps heavy duty cord away from work area for greater safety.

Let Your SKIL Distributor Show You in a Convincing Demonstration and FREE Trial . . . that 'SKIL is the Answer to Your Metal Finishing Bottlenecks!



A completely new SKIL Disc Sander. Produces smoother, faster results with greater ease, at less cost than ever before possible. Far more power; scientific design for lighter, easier handling; dust-tight trigger switch. Ball bearings throughout.



SKIL Corporation, Dept. P-124 5033 Elston Avenue, Chicago 30, Illinois ☐ I would like a SKIL demonstration and free

-- Mail This Coupon—NOW! --

Please send me literature on SKIL Sanders and Grinders.

Name	 	 	

Advertisers

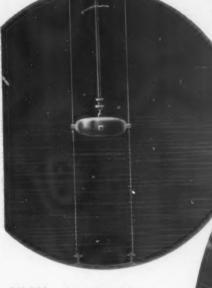


IN THIS ISSUE

A	Crucible Steel Co. of America 21, 190, 233 Curtis Pneumatic Machinery Div., Curtis Mfg. Co	J
Aero Mayflower Transit Co. 238 Allen Mfg. Co. 221 Allmetal Screw Products Co., Inc. 40 Alloy Steel Products Co., Inc. 279 American Brass Co., The 197, 198	D	Jenkins Bros. 4th Cover Johns-Manville 61 Johnson Bronze Co. 266 Johnson Steel & Wire Co., Inc. 222 Joliet Wrought Washer Co. 154
American Chain & Cable Co., Inc64, 254 American Felt Co. 271 American Hard Rubber Co. 148 American Insulator Corp. 223	DeLaval Steam Turbine Co. 220 Detroit Stamping Co. 132, 226 Dodge Mfg. Corp. 145 Dolge Co., C. B. 192	K Chambal Cam
American Screw Co	Downingtown Iron Works, Inc., Div. of Pressed Steel Tank Co	Kaiser Aluminum & Chemical Corp. 149, 282, 283 Kearfott Co., Inc. 248 Keasbey & Mattison Co. 275 Keuffel & Esser Co. 193
Toll Promotion 10 American Welding & Mfg. Co., The 229 Ampco Metal Inc. 232 Amplex Div. of Chrysler Corp. 29 Anaconda Copper Mining Co. & Sub-	E	Keystone Steel & Wire Co. 194 Kidde & Co., Inc., Walter 203 Kimberly-Clark Corp. 213 Kuhn & Jacob Molding & Tool Co. 188
sid. Cos. 197, 198 Anchor Post Fence Co. 236 Ansul Chemical Co. 55 Apex Machine & Tool Co., The 56 Arrow-Hart & Hegeman Elec. Co. 37	Eagle Lock Co., The	Kurz-Kasch, Inc 153
Atlantic Screw Works, Inc. 7 Atlas Plywood Corp. 62	Enterprise Galvanizing Co. 294 Esleek Mfg. Co. 172 Essmueller Co. The 298	Laminated Shim Co., Inc. 212 Lamson Mobilift Corp. 156 Lamson & Sessions Co., The 7 Linear Inc. 243
В	F	Loroco Industries, Inc
Babcock & Wilcox Co., The, Tubular Products 217 Bagshaw Co., Inc., W. H. 142	Federal Telephone & Radio Corp 267 Federated Metals Div., Amer. Smelting & Refining Co	M
Baltimore & Ohio Railroad 155 Baltimore Sales Book Co. 173 Barreled Sunlight Paint Co. 281 Bassick Co., The 306 Bath & Co., Inc., John 59	Fort Howard Paper Co3rd Cover French & Hecht Div., Kelsey-Hayes Wheel Co	Madesco Tackle Block Co. 244 Marsh Corp., Jas. P. 58 Master Elec. Co. 245 Master Products Co. 140 Mayer Co., George J. 295
Behr-Manning Corp. 292 Bendix Aviation Corp., Scintilla Div. 296 Fries Instrument Div. 196 Bethlehem Steel Co. 54	G	McLouth Steel Corp. 249 Midwest Piping Co., Inc. 151 Millers Falls Co. 268
Black & Decker Mfg. Co. 43 Blake & Johnson Co., The 7 Bower Roller Bearing Co. 25 Bowers Battery & Spark Plug Co. 260 Brad Foote Gear Works, Inc., Sub-	Gair Company, Inc., Robert 251 Garret Co., Inc., George K. 181 Gates Rubber Co. 19 Gaylord Container Corp. 305	N National Business Publications
sidiary Amer. Gear & Mfg. Co. 252 Brainard Steel Co. 285 Bridgeport Brass Co. 253 Bristol Brass Corp. 274 Bristol Co., The 45	General Box Co. 230 General Chemical Div. Allied Chem. & Dye Corp. 191 General Electric Co. Apparatus Div. 138, 139	National Lead Company 51 National Lock Co. 7 National Screw & Mfg. Co. 7 National Supply Co., Spang-Chalfant
Browning Mfg. Co. 121 Browning Mfg. Co. 250	Electronics Dept. 125 Lamp Div. 293 Gits Bros. Mfg. Co. 189 Globe Steel Tubes Co. 291	Div. 42 National Vulcanized Fibre Company 158, 159 Newark Wire Cloth Co. 150 New Departure Div. of General
c	Goodrich Co., B. F	Motors 66 New York Belting & Packing Co. 11 Norton Company 57, 292
Campbell Chain Co	Grinnell Co., Inc. 6 Gulf Oil Corp. 273	0
Central Screw Co. 7. 277 Century Elec. Co. 1 Chace Co., W. M. 160 Chain Belt Co. 199 Chase Brass & Copper Co., Inc. 187	н	Oakite Products, Inc. 286 Ohio Brass Company 31 Ozalid Div., General Anlline & Film Corp. 169
Cities Service Oil Co. 247 Clark Equip. Co., Industrial Truck Div. 241	Hamilton Watch Co	P
Classified Advertising Section 294 Cleveland Cap Screw Co. 137 Cleveland Container Co., The 200 Cleveland Twist Drill Co. 143 Colorado Fuel & Iron Corp., Wick-	Harper Co., The H. M	Page Fence Association 164 Page Steel & Wire Div. 64, 254 Parker-Kalon Div., General Amer. Trans. Corp. 7, 146, 147
wire Spencer Steel Div. 204, 205 Columbia-Geneva Steel Div. 204, 205 Columbia Ribbon & Carbon Mfg. Co., Inc. 172 Columbia Southern Chemical Corp. 119	Hyatt Bearing Div., General Motors Corp	Pawtucket Mfg. Co. 218 Pennsylvania Optical Co. 49 Perkins Machine & Gear Co. 256 Permacel Tape Corp. 179
CONOVER-MAST PURCHASING DIRECTORY 278 Consolidated Molded Products Corp., 232	1	Pheoll Mfg. Co. Pittsburgh Plate Glass Co., Brush Div. 295 Plume & Atwood Mfg. Co. 207
Continental Diamond Fibre Co	Illinois Gear & Machine Co	Plymouth Rubber Co., Inc. 232 Powell Valves
Copperweld Steel Co. 16 Crane Company 14 Crosby Co. The 259	Inland Wire Products Co	Pond 224 PURCHASING MAGAZINE 228 Pyrene-C-O-Two 240

In Small Parts or Large...

Carpenter Stainless No. 20
Controls STRONG Corrodents



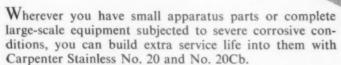
SMALL—This diagram shows float and attached steel indicator strip of an automatic gauge used in sulphuric acid storage tanks. These parts are made from Carpenter Stainless No. 20 and No. 20Cb for longer life.

42

169

ING

LARGE—Carpenter Stainless No. 20Cb sheet, plates and tubing, and Carpenter No. 20 bars provide super corrosion resistance that keeps huge acid-pickling machines like this one on the job, saves maintenance time and expense.



This super stainless alloy is highly resistant to H₂SO₄ concentrations or solutions, as well as a long list of other strong corrodents. So build with Carpenter Stainless No. 20 and No. 20Cb for greater freedom from corrosion troubles, extended equipment life, less down-time for replacements, and greatly reduced corrosion control costs.

This time-saving, cost-cutting super corrosion-resistant Carpenter stainless alloy is available in the form of No. 20Cb tubing, pipe, sheet and plate, as well as No. 20 bar, wire, strip, and billets. Ask your nearest Carpenter distributor or sales office for assistance on your corrosion problems . . . and a copy of the NEW Carpenter Stainless No. 20 and No. 20Cb handbook.



The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

Export Dept., The Carpenter Steel Co., Port Washington, N. Y .- "CARSTEELCO"



Stainless Tubing & Pipe

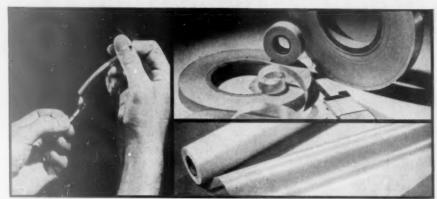
For information on Carpenter Stainless No. 20 strip, wire, billets, contact The Carpenter Steel Company, Reading, Pa.

For More Information Circle No. 338 on Inquiry Card-Page 17

DECEMBER, 1954

303

Give High Speed, High Temperature Electrical **Equipment the Steadfast Protection of IMC's Growing Line of TEFLON® Electrical Insulations**



DIEFLEX R - TEMPTUBE TEFLON-TREATED GLASS SLEEVINGS . VARTEX TEFLON-COATED GLASS CLOTH . RM+ TEFLON TAPES, TUBES, RODS, AND SHEETS.

Remarkable electrical, thermal, mechanical, and chemical characteristics are ideally combined in Teflon electrical insulations. This means that more and more electrical insulating requirements involving high temperature, high frequency, corrosion, and abrasion are being met by IMC's Teflon

Thin .0025" RM Teflon film tapes, as well as RM sheets, tubes, and rods, thrive on temperatures in the range of -80°F to +500°F. Thin RM film tapes are also unique because at high temperatures they contract to insure a tight fit; for use in motors, generators, and coaxial cables. RM Teflon sheets, tubes, and rods can be fabricated into component parts. These RM Teflon insulations combine toughness, resiliency, and a zero moisture absorption factor to assure successful service under severe operating conditions. Teflon insulations do not readily adhere to sticky materials, are inert to chemicals (except molten alkali metals and fluorine at high temperatures and pressures), and will not carbonize under arcing. They offer excellent electrical properties over a wide thermal range, exhibit low power loss, and low dielectric constant. All of these properties are present to a modified degree in the different Teflon materials.

In addition to the RM Teflon insulations, available IMC insulations include Dieflex-Temptube Teflon-treated braided glass sleevings that qualify as flexible Class H materials, and serve perfectly for insulating leads and wires. Also there is Vartex Teflon-coated glass cloth that has excellent physical strength and extreme abrasion resistance for use as a coil separator, slot liner, coil wrapper, or layer insulation in transformers and motors.

Ask your IMC sales office for technical data, prices, engineering suggestions or samples on IMC's Teflon electrical insulation.

OTHER IMC'S CLASS H INSULATIONS

Varnishes †, Adhesives †, Compounds †, Resins †, and Grease †

Varnish- or rubber-treated glass tubings, sleevings †, cloth †, tape, and cord †

Silastic pastes †, tape †, and cloth

Silicone-bonded mica segment plate, flexible plate, and mica-glass cloth combination sheets †, and tape

Laminated glass cloth-plastic sheets †, tubes, and rods *Raybestos-Manhattan, Inc. †Local stocks carried.

MANUFACTURERS CORPORATION

*CHICAGO 6

lete-Reading Eloc. Co. 100 S. Jefferson St. Phone CEntral 6-5390

Phone Central 6-7320

- AUTHORIZED REPRESENTATIVES

"MINNEAPOLIS 3

MILWAUKEE 2

PEORIA

*LOCAL STOCKS AVAILABLE AT THESE LOCATIONS For More Information Circle No. 339 on Inquiry Card-Page 17

Reliance Electric & Engineering Co. Remington Rand, Inc. Republic Steel Corp. Revere Copper & Brass, Inc	
Reliance Electric & Engineering Co. Remington Rand, Inc. Republic Steel Corp. Revere Copper & Brass, Inc	35
Remington Rand, Inc. Republic Steel Corp. Revere Copper & Brass, Inc	225
Republic Steel Corp. Revere Copper & Brass, Inc176, Reynolds Metals Co218, Rhode Island Tool Co	167
Revere Copper & Brass, Inc176, Reynolds Metals Co218, Rhode Island Tool Co	
Reynolds Metals Co218, Rhode Island Tool Co	177
Rhode Island Tool Co	219
	214
Riegel Paper Corp	235
Roberts Rubber Co., Weldon	299
Rockford Screw Products Co	7
Rochester Products, Div. of General Motors	23
Roebling's Sons Co., John A	
Ryerson & Son, Inc., Joseph T	68

Safeway Industrial		
Scott Paper Co		131
Scovill Mfg. Co	*******************************	7
Screw Research As		
Seymour Mfg. Co.,		269
Shakeproof		7
Shell Chemical Co.		215
Simonds Abrasive	00	
SKF Industries, Inc.	dal Maala	301
Spang-Chalfant Div.	National Supply	901
	, National Supply	42
Southington Hdwe.		7
Square D. Company		63
Standard Oil Co. (Indiana)	63
Standard Pressed St	teel Co32, 163,	185,
		260
Sterling Bolt Co	***********	7
Stockham Valve Co)	297
Strathmore Paper	Co	171
Sturtevant Mill Co.	Treatment of the contract of t	52
Sun Oil Co		
Sylvania Electric P	roducts, Inc	280

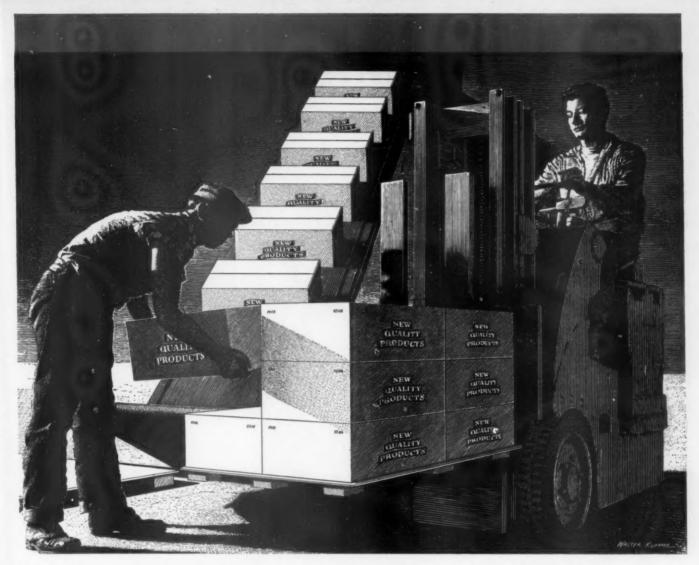
Taylor Fibre Co. Taylor Co., The Halsey W. Tennessee Coal & Iron Div204, Texas Company2nd Co	164 205 ver
Thermoid Co. Thompson & Son Company, The Henry G.	255 206
Timken Roller Bearing Co. Titeflex, Inc. 208, Torrington Company Tube-Turns, Inc. 133,	209 157

Uddeholm Co. of America, Inc	227
Udylite Corp	289
Ulbrich Stainless	28
Union Bag & Paper Corp	127
Union Wire Rope Corp	135
United Screw & Bolt Corp	12
United States Gauge, Div. of Ameri-	
can Machine & Metals, Inc	211
United States Rubber Co46	. 47
United States Steel Export Co204,	205
Upson-Walton Company	276

Valley	Electric	Corp	********			298
Victor	Chemical	Works	261,	262,	263,	264

Wagner Electric Corp	30
Wales-Beech Corp	7
Walworth Company	258
Ward Leonard Electric Co161,	162
Washington Steel Corp	
Western Automatic Machine Screw	20
Co	296
Western Felt Works	
Wheelock, Lovejoy & Co., Inc	212
Wickwire Spencer Steel Div. of the	
Colorado Fuel & Iron Corp	26
Willson Products, Inc	210
Wirebound Box Mfrs. Assoc	
Wisconsin Motor Corp.	192

Yale	28	Towne	Mfg.	Co.	**********	129



SAVE IN PRODUCT HANDLING...



Want to cut your costs of in-plant handling, warehousing or loading? Here are two ways that Gaylord containers can help you do the job:

Speed up! Sturdy, resilient Gaylord boxes are engineered to stand up under fast handling by modern, high-speed equipment.

Save space! Precision-made Gaylord containers are dimensionally "true." They stand straight and solid... even when stacked high.

For containers to promote profit-saving product handling in your plant, call your nearby Gaylord sales office today.

CORRUGATED AND SOLID FIBRE BOXES . FOLDING CARTONS . KRAFT PAPER AND SPECIALTIES . KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION * ST. LOUIS

SALES OFFICES FROM COAST TO COAST * CONSULT YOUR LOCAL PHONE BOOK

For More Information Circle No. 340 on Inquiry Card-Page 17

DECEMBER, 1954

129

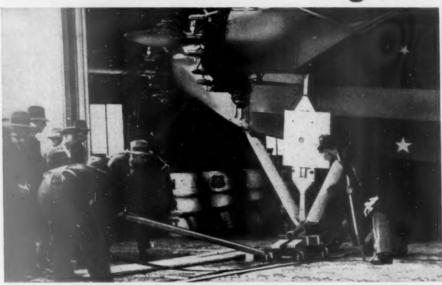
ING

305

MATERIALS-HANDLING NEWS

* Panel Discussions by Bassick, World's Largest Manufacturer of Casters and Floor Protection Equipment

From "Southern Cross" to B-36--Bassick takes over on the ground



"Southern Cross," standing on dollies equipped with Bassick casters, gets once-over from Australian pilot Kingsford-Smith (right).

Flying the big ocean

In early June, 1928, the 3-engine "Southern Cross", piloted by Kingsford-Smith, made the world's first trans-Pacific flight from San Francisco to Brisbane, Australia.

Proven conventional Bassick casters were selected for pre-flight handling of the "Southern Cross". Today Bassick casters are specifically designed to meet exacting requirements for safe efficient handling of modern aircraft.



80,000 lbs. is no strain for these 4 Bassick casters.

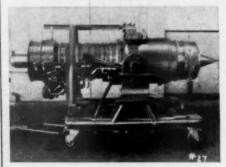


Another Convair-built 6-engine B-36 takes off.

25 years later

Convair of Fort Worth, Texas, chose Bassick to produce the highly specialized dual 18" wheel "Floating-Hub" shock-absorbing caster for their B-36 handling dollies. These 675-pound giants have an operational load rating of 20,000 pounds each yet permit easy, precise handling of these huge Air Force bombers in production. Bassick's "Floating-Hub" shock absorbing casters help preclude airframe damage during assembly by eliminating winding stress, shock and vibration due to dolly handling—write for "Floating-Hub" catalog FH-53.

Fretting corrosion?



"Fretting corrosion", killer of modern jet engines, is another problem licked by Bassick's patented "Floating-Hub" casters — the only caster designed to absorb both horizontal and vertical shocks.

When wheels equipped with "Floating-Hub" roll over obstacles or rough surfaces, their deflection is controlled and their recovery immediate — preventing damaging shock forces, vibration and winding stress from being transmitted to the vehicle or precious cargo. Vibration frequencies are interrupted and immediately damped out by the inherent snubbing action, precluding resonance and "fretting corrosion". Ask for catalog FH-53.

New caster feature

Grease dripping from bearings exposes them to premature wear—increasing maintenance and repair cost. It's also an accident hazard and harms floor surfaces and rubber tires. Cure: Bassick grease retainer cup now standard on all Bassick Series 99 casters.

Get all the facts on the most complete line of shock-absorbing and conventional casters from your Bassick industrial distributor. He's got the stock and the know-how to give you fast efficient service on all your requirements.



THE BASSICK
COMPANY
Bridgeport 2, Conn.
In Canada:
Belleville, Ont.

Bassick STEWART SW

MAKING MORE KINDS OF CASTERS... MAKING CASTERS DO MORE

75 YEARS OF CASTER LEADERSHIP



THAT'S WHY

Fort Howard Paper Towels

GIVE YOU BETTER
PERFORMANCE AT
LESS COST!

For 35 Years Manufacturers of Quality Towels, Toilet Tissue and Paper Napkins

Fort Howard's method of treating pulp fibers results in superior paper towels that give you superior towel performance. A typical example is Fort Howard's Pure-White Plyfold — with Controlled Wet Strength for firmness and strength when wet ... with Stabilized Absorbency so Plyfold retains its drying power regardless of towel age. Like all Fort Howard Paper Towels, Plyfold has sufficient body for maximum absorbency.

Each of the eighteen grades and folds of Fort Howard Paper Towels has these three requirements of a good paper towel. In addition, all Fort Howard Towels are Acid Free . . . feel good, are easy on your hands. You can feel the difference in Plyfold yourself — and you can see how they dry faster, better, more economically. Call your Fort Howard Distributor Salesman today!







FORT HOWARD PAPER COMPANY
GREEN BAY, WISCONSIN

For More Information Circle No. 102 on Inquiry Card-Page 17



Architect: VICTOR GRUEN, Associated Architects and Engineers, Inc.
Chief Mechanical Engineer: JOSEPH B. OLIVIERI
Consulting Mechanical Engineers: H. B. BEYSTER & ASSOCIATES, INC.
General Contractor: BRYANT AND DETWILLER CO.
Plumbing and Heating Contractor: THE DONALD MILLER COMPANY
Air Conditioning Contractor: CARRIER CORPORATION

JENKINS VALVES control 50 miles of piping



JENKINS VALVES installed at Northland Center include all types of bronze valves, as well as iron and steel valves up to 24" diameter. Above are valves controlling flow through boiler feed pumps at the steam generating plant. Refrigerating equipment in this same central power house provides chilled water for cooling, which is piped and metered to all stores, at the rate of 10,000,000 gallons per day. Water needs equal those of a city of 50,000 population. Fire protection system includes 5000 automatic sprinklers and 25 hydrants, served by 200,000 gallon water tank.

Detroit's new \$30,000,000 Northland Center is a shopper's dream. Centered in a parking space for 8341 cars, more than a mile of stores permit "one-stop" shopping for any merchandise or services desired.

Every facility at Northland was planned to provide cost-saving efficiency for store operators along with exceptional comfort and convenience for shoppers. Many design and engineering innovations were required, notably in the plumbing, heating, air conditioning, and fire protection systems. Jenkins Valves were chosen for thousands of control points on the 50-mile network of piping involved to assure trouble-free performance, safety, and long-range maintenance savings.

This confidence in the extra measure of efficiency and economy provided by Jenkins Valves is shared by leading architects, engineers, and contractors in every field of construction. Despite this extra value, you pay no more for Jenkins Valves.



For new installations, for all replacements, let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.

SOLD THROUGH LEADING INDUSTRIAL DISTRIBUTORS

For More Information Circle No. 102 on Inquiry Card-Page 17

